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Florida Agriculture & Tropical Storms

Don't Poison Your Livestock

August 1959

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The Cover . . .

Our cover this month shows a side view of a giant harvesting rig used on the Snively Farm, northeast of Lake Wales. (See story on page 11 about this 24-month-old vegetable operation.)

Fifty-four feet wide, the machine may be adjusted to various heights to accommodate many crops. Pickers place vegetables or fruit on a conveyor belt which delivers the produce to a trailer at the far end.

The labor-saving machine moves through the field at any desired speed. The long belt assembly can be turned to parallel the direction of the tractor for moving from field to field.

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Hardening of the heart ages people a lot faster than hardening of the arteries.

Coming Events

Aug. 3-8: 4-H Tractor & Electric Clinic, Camp Timpooche.
Aug. 3-8: Wildlife Institute, Camp McQuarrie.
Aug. 7: Gatrell Duroc Sale, Fairfield.
Aug. 10-12: Florida Beekeepers' Institute, Camp Cloverleaf.
Aug. 10-14: Florida Citrus Institute, Camp McQuarrie.
Aug. 13: West Florida Dairy Show, Chipley.
Aug. 13: Florida Cattlemen's Institute, Camp Cloverleaf.
Aug. 17-22: Florida Poultry Institute, Camp McQuarrie.
Sept. 3: Florida Guernsey Sale, Orlando.
Sept. 10: Florida Jersey Sale, Orlando.
Sept. 17: Ninth annual Citrus Processing Conference, Winter Haven.
Sept. 23-25: FFVA's 16th annual convention, Miami Beach.

How smart are you?

1. What is the largest fresh-water lake in the world?
2. Is shark meat edible?
3. What is the largest member of the violin family?
4. To what did God change Jacob's name?
5. What is the difference between a "draft" and a "note"?
6. "Jack-tar" is another name for what?
7. What is the national salute to The Flag?
8. For what is a "fuzz-stick" used?
9. Why do primitive people paint their faces in war time?
10. Exactly what is quicksand?

(Answers on Page 29)

TAMPA, FLORIDA — AUGUST, 1959

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Sure you get power in the Oliver 550—more of it than ever before. Now it's in the FULL 3-PLOW SIZE. But that isn't all. You get the foundation of a full TEAMED-POWER system of farming—ready to "get up and go" on dozens of farm jobs.

THE POWER: It's the *new* TEAMED-POWER 550, huskier and snappier than ever... ready to move out and do a man-size job anywhere on the farm—in the field or around the farmstead. And naturally it has a low profile, so you can get in where there's headroom to walk. Choose the gasoline or diesel engine, whichever saves most in your area. You get a full range of speeds—from less than one to nearly 15 miles per hour. And in every speed you get fully *automatic draft control.* It's the miracle feel that keeps 3-point hitch implements running at nearly uniform depth.

THE OLIVER 550 SYSTEM: Easily the leader in all-around practical farming, with a time-saving TEAMED-POWER bonus for every kind of farm. A whole fleet of design-matched 3-point hitch and pull-type implements is ready to give you the jump on the season—ready to plant, cultivate and harvest... ready to do your chores. Choose the *Oliver system* to do your whole machinery job or take up the slack with your big-equipment force. You'll find power farming never saved you more than when you invest in a 550.

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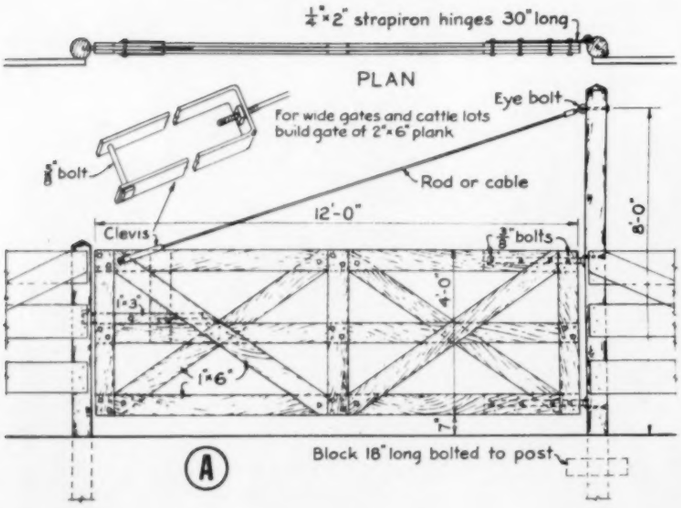
See Your OLIVER DEALER and See

Good Plans for GOOD BUILDING

By T. C. SKINNER

Extension Agricultural Engineer
Florida Agricultural Extension Service

Farm Gates



GOOD GATES are something that every farm should have. How often, though, do you see farmers pulling and tugging on gates that are hard to open?

More often than not, a gate does not work properly because it was not built properly.

I believe that most farmers recognize the value of good gates and would build them . . . if they knew how. But just like any other structure, it is difficult to do a good job of gate building without a plan.

The Florida Agricultural Extension Service has several good farm gate plans. These are available to all Florida farmers and ranchers.

One of these plans is for an Auto Bumper gate. If you are interested in this type gate, request plan 5614.

Construction of several different types of gates (one of which is shown here) is detailed in plan number 5505. Because gates serve different purposes, one plan may better suit your needs than others.

For those who want all the work taken out of opening farm gates, plan number 5467 is the one to choose. This plan shows how to build an automatic gate that can be opened from the car window.

Each of the plans referred to can be obtained through your local County Agent's office or by directing your request to the writer.

Controlling Cabbage Worms

CABBAGE WORMS are easiest to control when they are small.

A similar situation exists with the cabbage looper. It is easy to control them when small, but the large, fully-grown worms are almost impossible to control economically.

Two species of aphids—the green peach aphid and the cabbage aphid—are present during the cabbage season:

In large numbers, the green peach aphids reduce the vitality and growth of the plant. They are found on the undersides of the bottom leaves of the cabbage plant.

Good control of this pest is obtained with parathion at the recommended dosage. The spray or dust should cover both sides of the leaves.

Cabbage aphids are grayish-green and appear on the upper leaves and head of the plant. These aphids are more difficult to control as they get down between the leaves, where they are protected against direct contact with insecticides.

Parathion, phosdrin, systox, guthion, and phosphamidon—in limited tests—gave complete kill of all aphids contacted by the spray. Control of small infestations is easiest.

"If I had seen you coming, I'd have moved the barn."

2 GREAT ASGROW HYBRIDS

for the grower who wants yield AND quality AND dependable field performance

GOLDEN SECURITY. Late midseason. Most popular leading hybrid sweet corn for Florida. Plants vigorous, heavy-yielding largely double-eared. Ears attractive, well protected against worm damage.

SIXTYPAK. Late midseason. Exceptionally heavy producer of medium large ears of really superior eating quality. Highly resistant to wilt. Very tolerant of leaf blight.

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Cattlemen's Institute Set

MORE THAN a score of specialists will participate in the sixth annual Florida Cattlemen's Institute program on August 13. The all-day session will be held at Camp Cloverleaf.

The morning session will begin at 9:30 o'clock, according to Institute director James E. Pace. He is also animal husbandman for the Florida Agricultural Extension Service.

Program highlights will include the following topics and speakers:

"Beef Price Outlook"—C. C. Moxley, Extension Service agricultural economist.

"Weed Control in Pastures"—J. E. McCaleb, assistant agronomist, Range Cattle Station, Ona; J. R. Orsenigo, horticulturist, University of Florida, and E. G. Rodgers, associate agronomist, Gainesville Agricultural Experiment Station.

"Herd Management and Pasture Fertilization Practices"—ranchers Russell Kaiser of Lake Worth, Ralph Sexton of Vero Beach, and L. H. Turner of Sarasota.

"Pasture Management" – panel discussion. Panel members will include:

R. J. Allen Jr., assistant agronomist, Everglades Experiment Station, Belle Glade; Nathan Gammon Jr., soils chemist, Gainesville Experiment Station; E. M. Hodges, agronomist, Range Cattle Station, and O. C. Ruelke, assistant agronomist, Gainesville Experiment Station.

Also participating in this discussion will be Leroy Fortner, Ed Green, and Harvey Page. All three are fertilizer salesmen for Tampa firms.

"Culling and Feeding of Cattle Herds"—A. C. Warnick, assistant physiologist, Gainesville Experiment Station.

"The Beef Cattle Disease Situation in the State"—W. L. Sippel, head, animal disease laboratories, Florida Livestock Board.

"Activities of the Florida Cattlemen's Association"—Alto Adams, Jr., FCA president.

* * *

Feed Conversion

AN INCREASE in feed conversion of some 10 to 12% is estimated by 1975, and attainable gains in output per animal range from 7 to 27% above current levels.

The number of pounds of feed required to produce a pound of meat and milk in the next 17 years is expected by USDA experts to decline like this:

Hogs: 15% less, compared to almost no change in the past 17 years.

Liveweight beef: 8 to 9% less feed, compared with a 3% cut in the past.

Milk: 10% less to produce a pound, compared with 3% since 1939-41.

Don't chance losing your money and work. Pick up the telephone and call us each time you make a shipment. Protection for packing, processing, canning plants . . . Completely staffed for insurance engineering surveys.

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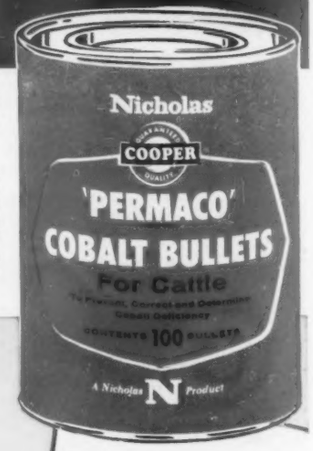
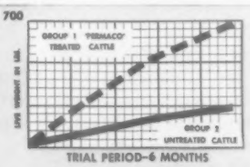
End "Hidden Hunger" In Your Cattle . . . One Dose Increases Beef Gains 10% to 22%

'PERMACO' COBALT BULLETS . . . the only one-dose way to supply cobalt continuously

It's a fact—as many as 9 out of 10 cattle in Florida are suffering from "Hidden Hunger" due to lack of cobalt! One sick or unthrifty animal in your herd usually indicates that your **entire herd** is suffering from cobalt insufficiency. These borderline or "unapparent" cases can seriously reduce beef production—and **reduce your profits!** But a single 'PERMACO' Cobalt Bullet per head provides a DAILY cobalt supply for a FULL YEAR! Even in areas where beef fattening has never been a problem, 'PERMACO' Cobalt Bullets can give a minimum of **10%** to **22%** INCREASED beef gains.

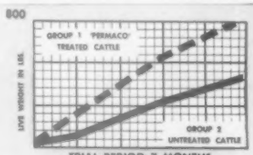


ONE DOSE PRODUCED THESE RESULTS IN CONTROLLED TRIALS!



66 lbs. per head in extra weight gains!

In this trial on 14 cattle, the total extra weight gain of 924 lbs. was the equivalent of **gaining an extra animal in this small herd.**



735 lbs. in extra weight gains in 7 months!

This trial on 21 animals was conducted in an area where beef fattening was never a problem.

(Controlled trials were also conducted on dairy cattle with equally successful results. One 'PERMACO' Cobalt Bullet per animal increased milk and butterfat production up to 26%.)

2-WAY PROTECTION FOR CALVES!

1. Bullet your breeding cows to insure that calves get off to a good start.
2. Avoid setback—bullet your calves at weaning before they go on winter pasture and feeds.

Right NOW . . . At Round Up . . . Get Rid of Your Cobalt Problem!

Drenching alone is not enough to reduce unthriftiness. Mineralized drenches or cobalt drenches must be given twice a week to provide sufficient cobalt. But with the Cobalt Bullet, one dose and you can forget about your cobalt problem for 12 months. At your next handling, bullet your animals at the same time you drench them. Remember—the cobalt problem increases when cattle are on winter pasture and feed. So give them a FULL YEAR'S supply with a single dose of 'PERMACO' Cobalt Bullets. See your veterinarian or usual supplier TODAY!

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Citrus CLOSE-UPS

By **FRED P. LAWRENCE**

Citriculturist
Florida Agricultural Extension Service

You're Invited To the 26th Annual Citrus Growers Institute which will be held at Camp McQuarrie (in the Ocala National Forest) during August 10 to 14, 1959. Symposiums on the results of applications of sprays and dust materials by aircraft, the production of quality fruit and a discussion on the long-time outlook for citrus will highlight this year's three-day program.

Dooryard Citrus Since most of the information available on the culture of citrus applies mainly to commercial plantings and is not always applicable to dooryard trees, we would like to take this opportunity to make a few remarks that may be helpful to the dooryard farmer.

Generally Speaking — There are two types of dooryard growers: the one who plants his trees and promptly forgets about them, and the one who pampers his trees. The latter usually is as unsuccessful as the former. Far too many homeowners try to do too much for their citrus trees and more often than not they lavish sprays, fertilizers and other materials upon and around the tree that do more harm than good. To help correct these conditions the University published Bulletin 166 in December of 1957.

Some Suggested Don'ts — We'll begin with the selection of the planting site. *Don't* plant citrus trees in the shade. All varieties of citrus grow best in direct sunlight. *Don't* plant citrus on poorly drained soils—they should be not only well drained soils, but also fertile for best results. Turning now to culture. *Don't* spray citrus trees until you know what the problem is and what chemical or chemicals, at what dilutions, is best for that particular condition. *Don't* over-fertilize the tree. Three applications of a commercial fertilizer per year will give satisfactory results. Ask your dealer for a citrus special fertilizer—one that contains the necessary minor elements. This will usually be a 4 or 6 percent nitrogen fertilizer (we prefer at least a 6 percent). Such fertilizers should be broadcast evenly over the ground from the trunk of the tree to well beyond the drip at the rate of three-fourths pound of a 6 percent mixture for each year's age of the tree. For example, a six-year-old tree would receive 4½ pounds of a 6 percent mixture three times per year (spring, summer and fall). Trees in excess of ten years of age

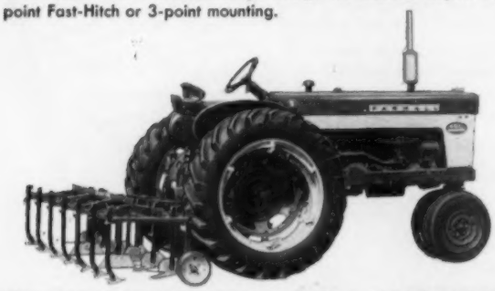
(Continued on Page 37)

Farmall 140 with the original "Culti-Vision" design—four-row cultivator for narrow-row crops, single-row for wide spacings.

NO WIGGLE...NO WOBBLE!

Work hoe-close with a McCormick® cultivator

New two and four-row, rear-mounted cultivators for 28 to 42-inch rows. Parallel-linkage design for uniform depth. Two-point Fast-Hitch or 3-point mounting.



New rear-mounted cultivator with three 144-inch tool bars. Available for IH tractors with 2 or 3-point Fast-Hitch and other tractors with 3-point hitch.

Side-to-side rigidity is the keynote of McCormick beet, bean and vegetable cultivator design . . . rigidity that lets you set tools close to the row, confident of swerve-free accuracy for hoe-clean work. This rigid construction, combined with Farmall® visibility and steering accuracy, is your ticket to the cleanest tractor cultivation you've ever done!

Quick loosen-and-set clamps provide a vise-like grip to hold standards exactly where you set them on the tool bars . . . yet let you change row settings in a jiffy. Only one set screw per standard to loosen and tighten to make the change!

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Nematode-damaged plant on left grew in untreated soil. The plant on right thrived in Nemagon-treated soil—note the fuller foliage, more vigorous roots.

NEMAGON® Soil Fumigant pays dividends at harvest

SEEING IS BELIEVING! Thousands of vegetable growers get outstanding results at harvest by knocking out nematodes with NEMAGON Soil Fumigant. In test after test, NEMAGON Soil Fumigant has proved effective against all harmful species of nematodes.

Applied to the soil, NEMAGON Soil Fumigant becomes a potent gas which kills nematodes as it spreads *and it can be used around the roots of most growing plants!* For best results follow the label instructions at all times.

You too can make this a profitable season. Knock out destructive nematodes with NEMAGON Soil Fumigant. It is available from your pesticide dealer under well known brand formulations. He'll be glad to give you complete information on its application. Don't delay, order your supply today!

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AGRICULTURAL CHEMICALS DIVISION
55 Marietta Street, N.W., Atlanta 3, Georgia

SHELL

Quality Sweet Potatoes Have Year-Round Market

SWEET POTATO production in Florida has dropped from an average of 20,000 acres planted during the period 1903-1953 to a low of about 4,000 to 5,000 acres.

Nevertheless, a market analysis indicates that it might be possible for Florida to increase its share of sweet potato sales. So reports Dr. James Montelaro, associate vegetable crops specialist with the Florida Agricultural Extension Service.

"But to do this," he cautions, "sweet potatoes would have to be made available for sale from freshly-dug or stored stocks all year."

High quality sweet potatoes are usually in short supply from late May to early August. Florida growers could plan to take advantage of this fact.

Quality Florida sweet potatoes harvested during this period, the specialist believes, might be marketed at a fair price.

Obstacles to production of quality sweet potatoes under Florida conditions include infestations of the sweet potato weevil and root-knot nematodes. Dr. Montelaro adds:

"A third—and probably the most important—obstacle is the complex disease problem of sweet potatoes."

Like most vegetable crops grown in Florida, sweet potatoes require special attention in controlling diseases to produce high yields of good quality. Special equipment and facilities are needed to grow top produce.

Improperly cured sweet potatoes will not last in the store. Therefore good, adequate curing and farm storage facilities are necessary for the grower who wishes to market the crop later.

Good seed, according to most authorities, is half the crop. Consequently they suggest treating the seed with recommended chemicals before bedding, and to bed in disease-free soil.

Proper management – including selection of acceptable varieties, proper irrigation and harvesting, selective grading to eliminate diseased or bruised sweet potatoes, and care in selecting disease-free land—can aid the Florida grower in producing high quality sweet potatoes for a year-round market.

* * *

For sanitary reasons, the U. S. has blacklisted beef imports from the Honduras.

with **CALUMET BROWN COPPER OXIDE!**

Calumet *brown* Copper Oxide is the value copper that growers throughout Florida are turning to for fall fertilizing.

And it's no wonder!

Increased yields along with high quality crops are the result of using fertilizers containing this *brown* copper oxide by Calumet.

As a trace element or secondary plant food Calumet *brown* Copper Oxide supplies the necessary copper and gives you more for your money!

Compare these six extra values of Brown Copper Oxide with your present copper

CALUMET BROWN COPPER OXIDE OFFERS:

1 PROLONGED AVAILABILITY—Calumet *brown* Copper Oxide's low solubility rate minimizes leaching and makes the copper available over a longer period of time.

2 UNIFORM CONCENTRATION—Calumet *brown* Copper Oxide's solubility characteristics make this form of copper available to plants at a more constant rate.

3 HIGHER COPPER CONTENT—Compared with the highly soluble copper salts, Calumet *brown* Copper Oxide contains twice as many copper units per pound of material.

4 GREATER PLANT SAFETY—Calumet *brown* Copper Oxide is less toxic than the more soluble forms of copper and offers a wider margin of safety.

5 FITS HIGH ANALYSIS FERTILIZERS—The higher copper content of Calumet *brown* Copper Oxide makes it easier to mix into high analysis fertilizer formulations.

6 LOW COST—Calumet *brown* Copper Oxide is one of the most economical and lowest cost coppers available for fertilizer programs.

Your agricultural chemical supplier, with many years of experience in Florida agriculture, will be pleased to be of help to you in planning an effective fertilizer program and in securing the maximum benefits from Calumet brown Copper Oxide.

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Gives you complete clean-up of aphids and mites on citrus!
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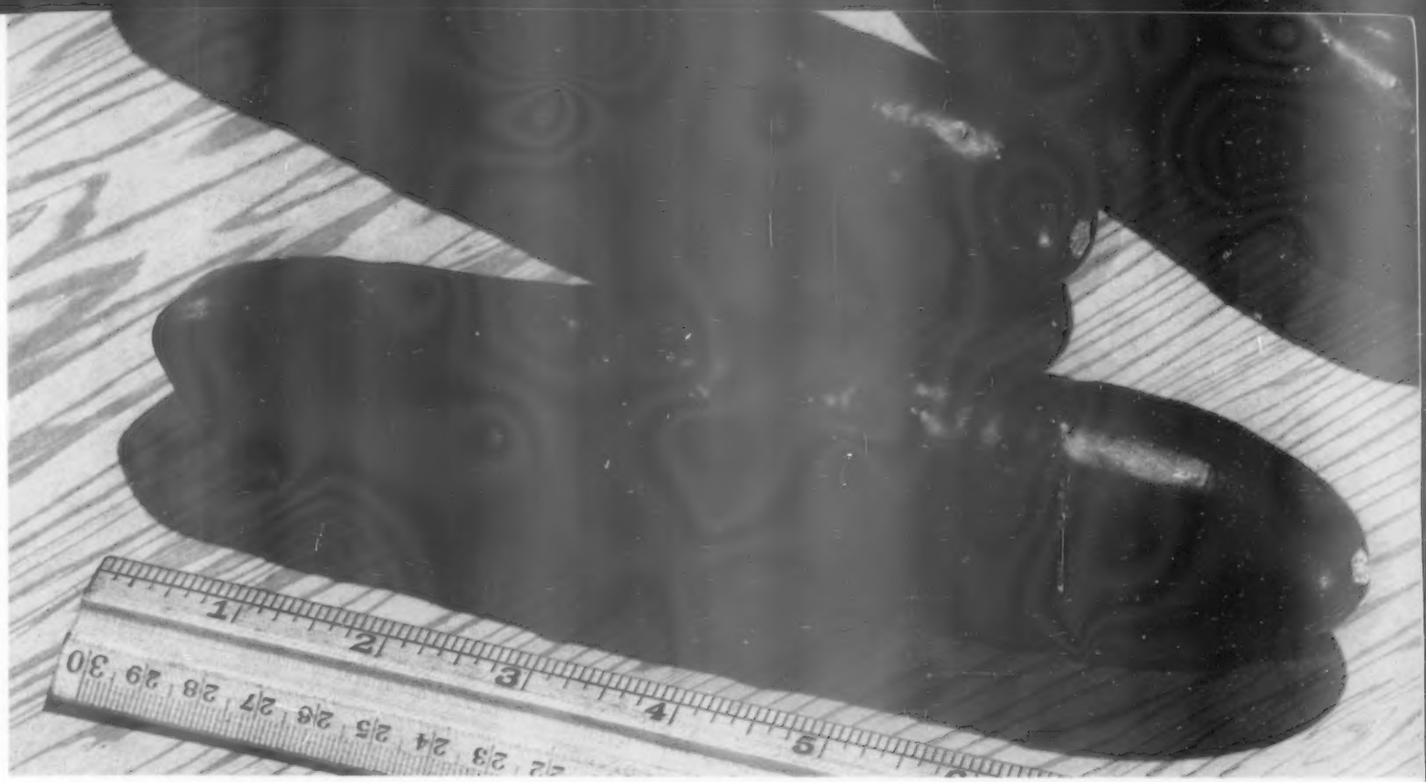
Provides essential iron, boron, manganese, zinc, copper and molybdenum in new *slow-soluble* form. Won't leach away. Nontoxic when used as directed. More than *2 million* pounds used last year—in premium fertilizers, also with lime. Try it and prove the difference! *Send $2.50 for 5-pound bag* (or $3.95 for 10 pounds), parcel post prepaid.
FERRO CORPORATION, 4211 East 56 St., Cleveland 5, Ohio



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P-51 DMR CUCUMBER

IS OUTSTANDING SHIPPER

This new Ferry-Morse development is ideal for shipping and has been tested with excellent results in Florida. Uniform, dark-green fruits average 8 inches long by 2½ inches in diameter. And P-51 DMR is Downy Mildew Resistant . . . yields are exceptionally heavy. Contact your Ferry-Morse representative today.

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GREENBACK Y. R. CABBAGE

PRODUCES DARKER GREEN,

MORE COMPACT HEADS

Another Ferry-Morse introduction, Greenback is superior for market and shipping. Heads are uniformly round, darker green and more compact than standard varieties; average 7½" in diameter. Vigorous, short-stemmed plants are slow to produce seed stalks, grow well even in soil heavily infected with Yellows. Don't delay—fill your requirements now.

SCIENTIFICALLY PACKED, CONDITIONED SEED FOR HIGHER YIELDS

Another result of Ferry-Morse research! Most seed can be injured by excess heat and moisture. Ferry-Morse seeds are dried scientifically to just the right moisture content, then packed in air-tight cans or foil-wrapped packages. Seed stays fresh longer . . . sealed away from moisture, safer from rodents and vermin!

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HOMESTEAD F-M 61 TOMATO BEARS UP TO FOUR QUALITY PICKINGS

This special strain selected by Ferry-Morse breeders is more productive than regular Homestead. Compact, Fusarium Wilt resistant plants allow closer planting, produce heavy early fruit set, and, where adapted, continue to yield quality fruits through third and fourth pickings. Bright-red fruits are smooth, large and deep.

Florida Agriculture and Tropical Storms

By WARREN O. JOHNSON
Meteorologist-in-Charge
Federal-State Frost Warning Service
Lakeland, Florida

CLIMATE IS PROBABLY Florida's greatest natural resource. However, every once in a great while, it has its drawbacks.

An occasional freeze, an infrequent hurricane, or even an overabundance of rainfall on the wrong field at the wrong time can try the patience of those in agriculture.

Within recent years, Florida agriculture has been buffeted by the coldest temperatures ever experienced during any three consecutive months and by some of the heaviest spring rainfalls on record.

The combination of frequent frosts and freezes, excessive rainfall, high winds, and prolonged cold made the 1957-58 winter one of the most disastrous growing seasons of this century for such crops as vegetables, ornamentals, cut flowers, strawberries and other tender plants, and pasture grasses.

Citrus suffered considerable damage due to the severe 1957-58 cold. However freezes of other seasons during this century and the latter part of 1800 caused a greater percentage of loss of citrus fruit and trees.

Now, many people are studying the hurricane cycles.

From 1885 to 1957, inclusive, 125 tropical storms of all intensities have entered or affected Florida significantly. About 60% of these are known to have been of hurricane intensity.

The longest period since 1880 without a *major* hurricane has lasted eight years, so far. This period began in 1951 and was still continuing at the time of this writing (June 1959).

Hurricanes have caused considerable damage to Florida agriculture. Greatest loss to citrus fruit occurred during the October 18-19, 1944 hurricane.

Crossing the coast near Sarasota, the center of that storm left the state near Jacksonville. Winds of over 80 miles per hour, with gusts up to 100 miles per hour, prevailed over the entire citrus area.

An estimated 21 million boxes of fruit were lost in the 1944 hurricane. There was also some damage to trees.

Fourteen million boxes of fruit hit the ground during the August 26-27, 1949 hurricane.

Probably the greatest tree loss was in September 1933 when heavy rains before the storm permitted the trees to be easily blown over in water-soaked groves.

Usually, tree and fruit losses are most severe to avocados and mangos. This is because these fruit are easier to damage and the limbs are brittle.

Greatest damage to vegetables, sugar cane, pasture grasses, and other low-growing crops is caused by flooding due to the excessive rain from a tropical storm.

Even minor storms, as far as wind is concerned, have produced heavy rains

In October 1941, a tropical disturbance, accompanied by winds under hurricane force, dumped over 35 inches of rain at Trenton, Florida in three davs — 30 inches of it in 24 hours. This was almost a million gallons of water per acre in the three-day period!

Since our last blow, Florida citrus trees have increased in size. Therefore they will probably be subject to more damage, should we have another storm as severe as the 1944 storm.

Groves in flat land areas and adjacent to coastal areas would be subject to more damage.

There is little that can be done to protect citrus trees from wind damage. Wind breaks should be maintained in groves adjacent to coastal areas, and also in large flatland areas.

Precautionary measures, however, can be taken for the excessive rains:

Careful calculations should be made of the amount of water the grove drainage system can handle. Consider that most tropical storms will produce from one-quarter to nearly a million gallons of water per acre in 24 to 48 hours.

Also, groves in hilly areas should be contoured so that excessive washing will not bury trees in the lower locations with dirt and expose roots of trees on the slopes.

HURRICANES AND CITRUS LOSSES 1926 THROUGH 1957

Hurricane Dates	*Fruit Loss - Boxes*
Sept. 18-19, 1926	Slight
Sept. 16-18, 1928	1,000,000*
Sept. 3-6, 1933	4,500,000*
Sept. 2-4, 1935	Along Gulf Coast
Oct. 6-7, 1941	Slight
Oct. 18-19, 1944	21,000,000
Sept. 15-16, 1945	4,000,000
Oct. 6-8, 1946	2,000,000
Sept. 17-18, 1947	6,000,000
Oct. 11-12, 1947	Slight
Sept. 21-22, 1948	Lower East Coast*
Oct. 4-5, 1948	Slight
Aug. 26-27, 1949	14,000,000
Sept. 1-7, 1950	Slight
Oct. 17-18, 1950	2,500,000

*Considerable tree damage
Other crops damaged by flooding as well as by high winds.

Our tropical storm period begins in June and continues to mid-November. The vulnerability of the state varies with the progress of the hurricane season.

August and early September tropical storms normally approach from the east or southeast. But as the season progresses into late September and October, the region of maximum hurricane activity (insofar as Florida is concerned) shifts to the western Caribbean.

Most of those storms that move into Florida approach the state from the south or southwest—entering the Keys, the Miami area, or along the west coast.

The most intense hurricane of modern times affecting Florida was the Labor Day-Florida Keys storm of 1935. The lowest pressure ever recorded in the Western Hemisphere, 26.35 inches, was recorded at that time.

Winds of that storm were estimated to be from 200 to 250 miles per hour. Generally, winds in a hurricane that passes over Florida has winds in gusts up to 100 miles per hour; occasionally as high as 150 miles per hour.

The U. S. Weather Bureau maintains a careful watch for the development of tropical storms and hurricanes

Just as soon as there are definite indications that a storm is forming —even though it is a thousand miles or more from the mainland—the storm is given a name* and the issuing of "advisories" begins.

Such advisories are issued frequently throughout the day and night as long as there is a possibility the storm might become a menace. They tell where the storm is, how intense it is, and its speed and direction of movement.

When a land area is threatened, the Weather Bureau issues hurricane warnings.

*(Names selected for 1959 hurricanes in the Gulf of Mexico, Caribbean Sea, and the Atlantic Ocean are as follows:

Arlene, Beulah, Cindy, Debra, Edith, Flora, Gracie, Hannah, Irene, Judith, Kristy, Lois, Marsha, Nellie, Orpha, Penny, Quella, Rachel, Sophie, Tanya, Udele, Vicky, Wilma, Xcel, Yasmin, and Zasu.)

TWO-WAY RADIO system enables general manager R. H. Hoskins to keep in constant contact with field crews, packing house foremen, and sales office.

CITRUS LEADER DEVELOPS MODEL FARM

By
THOMAS J. HUGHES

JOHN SNIVELY of Winter Haven doesn't believe in "putting all his eggs in one basket."

As one of Florida's largest independent citrus operators, his first love is citrus. But he is also rapidly gaining fame for the top quality cucumbers, peppers, tomatoes, and other produce grown on his muck farm northeast of Lake Wales.

Snively's fame as a producer of premium vegetables, however, is relatively recent. When the writer visited the farm in May, it was less than 24 months old!

Nevertheless, harvest was then in full swing:

Between 500 and 600 crates of cucumbers, selling for between $6 and $7, were expected to be picked that day. Peppers, while not as plentiful, were going at $12 and $13 per crate.

Moreover, tomatoes were being picked. Since that was the first tomato harvest, the price was not established.

Just two years ago, more or less, the present Snively farm was a wilderness. R. H. Hoskins, general manager of the vegetable operation, reports:

Wild cats and alligators dominated the area. As a matter of fact, the work crew at present keeps a wild cat—which they found when a small kitten—in a cage at the crew camp.

Even today, alligators are still a nuisance on the farm. They dig into the canal banks and wallow out holes, thereby necessitating frequent—and sometimes considerable—repairs.

The fertile farm land begins approximately one-half mile west of Lake Hatchineha and continues along Catfish Creek toward Lake Pierce. Its soil composition ranges from four inches to six feet of muck.

Some of the land is referred to as pure muck; some as sand and muck. The remainder is common Florida sand.

Presently, some 800 acres of this fertile land are in cultivation. The farm plan is laid out to include 1,200 tillable acres—as soon as it can be cleared of saw grass, myrtle, and other growth.

Catfish Creek at one time meandered all over the present farm area. And it frequently changed its course during high waters.

Now the creek serves as an ideal source of irrigation water. It has been harnessed with a number of water control gates which can alter the flow or raise the water table in any portion of the farm where moisture is needed.

The irrigation system consists of 23 miles of man-made canals.

One person is employed as a "water control man." His job is to adjust the water gates and see that the desired water table is maintained for maximum plant growth.

Planting and insecticide control on the vegetable farm is supervised by Henry Okuma. Japanese by descent, he is an expert in the horticultural field.

While he does not manage the picking crews, Okuma frequently assists in harvesting certain crops. This is particularly true where laborers tend to pick immature fruits such as tomatoes.

Many miles of wooded area and ranches isolate the farm. Therefore the operators maintain a model labor camp where the permanent workers eat, sleep, and enjoy recreation in the evenings and on weekends.

Each worker pays between $12 and $14 weekly for his "keep." This includes three good meals a day, sleeping quarters, laundry, television, and pool tables.

Guy Harrell, supervisor of farm labor, declares: "We make our money farming, not on the workers."

During the harvest season, most of the harvesting crews are brought to the farm daily by truck.

Last season's crops consisted of many different vegetables. The major emphasis was on cucumbers, peppers, and tomatoes.

Plantings this past spring included 60 acres each of cucumbers and peppers; the tomato acreage was not revealed. Sweet corn plantings covered approximately 100 acres.

In many of the crops planting dates are staggered, so that the harvest season will last several months instead of a few weeks. Eight 20- to 30-acre plantings of crowder peas, for example, were made a week apart.

Complete planting plans for next season were not revealed. However farm manager Hoskins did disclose that 50 acres of broccoli would be planted weekly so that harvest will commence in December and continue through March.

Giant multi-crop machines are used to harvest many of the Snively crops. (One of these units is shown on this month's cover.)

These machines have 54-foot booms. They are wide enough to cover 10 rows of cucumbers or 22 rows of broccoli at one time.

A conveyor belt carries the vegetables or fruit from the pickers at one end of the machine to a tractor-pulled trailer at the other end. Trailers are unloaded in the new packing house by a portable electric motor.

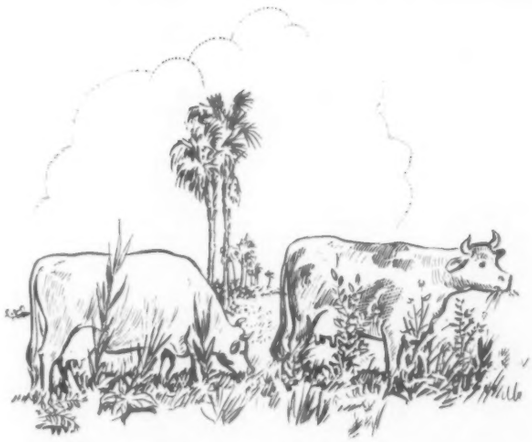
Farm officials use a radio system to keep picking and packing house crews posted on the quantity and type of vegetable to harvest and about market conditions. Vehicles of all key personnel are equipped with two-way car radios.

Snively's citrus sales department handles the sales of their vegetables, also.

STRANGE SIGHT: Although labeled "Snively Groves," these large refrigerated trucks are miles away from a citrus tree and are being loaded with fancy vegetables.

GIANT MACHINE, which covers *10* rows of cucumbers at a time, assist crews in the harvesting. (Our cover photo shows a side view of this unit.) The 54-foot boom can be adjusted to accommodate a variety of crops.

TRAILER filled with cucumbers (inset) is unloaded by placing an electric motor to gear which rolls the mobile floor to rear of vehicle.



POISONOUS WEEDS FREQUENTLY are found in pastures. When consumed in any quantities, they can be extremely harmful—or even fatal—to cattle.

Don't Poison Your Livestock

By DR. JAMES M. WING
Assistant Dairy Husbandman
Agricultural Experiment Stations

NOW, MORE than ever before, there is grave danger of accidental poisoning of livestock.

Wider use of products which could be toxic is responsible for this danger. Paint, for instance, is a killer because often it contains lead or other poisonous metals.

Toxic metals used in paints generally are cumulative poisons. Therefore their effects may not be seen until occasional small amounts build up—as they can do—to a lethal dose.

Cattle will pick up paint which is spilled. Sometimes they lick freshly painted buildings and equipment. And they are almost sure to get whatever paint they can from used containers, brushes, or sticks used for stirring.

Danger from this source is easily preventable. In the first place, special non-toxic paints are available for use on staunchions, calf pens, mineral boxes, or other equipment which animals contact frequently.

For outsides of barns and allied structures, only two precautions are necessary: Keep animals away until fresh paint dries, and dispose of all cans and equipment where livestock will not have access to them.

Lead poisoning also has occurred in cattle when they have licked discarded batteries and metallic lead in other forms.

Many modern medicines and other chemicals are dangerous unless used *exactly as directed* by the manufacturer or the prescribing veterinarian. This applies to materials used for skin troubles and to some substances used for external parasites.

Not only must these medicants be used in correct doses. They must also be used only for the particular class of animals for which they are prescribed:

Substances which can be safely applied to the skin of a cow possibly would, because of its concentration, kill a household pet.

Pesticides for pastures also are dangerous if not used exactly as directed.

These substances are extremely useful. And they are safe—if animals are kept off treated areas and/or mechanical harvest is delayed for the length of time indicated by the label on each poison container.

Old pesticide containers must be buried. Otherwise some of these may be eaten outright.

You can avoid poisoning problems by remembering this fact: Cattle seem to like the taste of arsenic compounds and some other pesticides which could cause them serious trouble.

Fertilizers can kill livestock also.

Cattle especially relish nitrates. They will consume lethal doses of this type fertilizer when it is available to them.

Therefore fertilizer must be stored where cattle cannot get to it. Moreover, after each fertilization, it is a good idea to keep all stock off the pastures until it rains.

Even then, for a few days following heavy nitrogen application, pasture grasses could contain enough nitrate to be dangerous as the only forage. This seems to apply especially to oats.

Old fertilizer bags should be buried or burned as soon as is practical after they are emptied.

Some pasture plants may become toxic when they mature.

If the seed heads of Dallas, Bahia, or similar grasses look moldy, they could contain ergot. This substance causes abortion—and sometimes death.

Other improved forages to watch are the sorghums. As long as these plants (which include Sudan and Johnson grass, Sart Sargo, and some other canes) are healthy, rapidly growing plants, they are not dangerous in any way.

But if drought, frost, floods, trampling, or anything else stunts them, prussic acid—which is a deadly poison—is formed.

After the sorghums are cut, sprouts are likely to come out of the stubble. *These sprouts are high in prussic acid and should not be grazed until they have grown for several weeks.*

If growing conditions are favorable, the cattle have access to plenty of other feed, and nitrogen fertilization is moderate, then grazing is not likely to be dangerous. However, it could be.

Second growth sorghum must be grazed only with extreme caution: Since prussic acid poisoning causes almost instant death, you can't save your animals by removing the feed when they begin to get sick.

Ensilage made from these plants, on the other hand, is safe—unless it is self-fed or unless very large amounts are taken from the silo at one time and fed immediately. This is because the prussic acid is volatile and will evaporate from the surface.

However if large feedings are to be removed at one time, the silage should be spread out for about four hours before cattle are allowed to eat it.

Speaking of silage, don't poison yourself by entering a closed silo right after filling with corn or legumes. Nitrogen dioxide, a very poisonous gas, may be present for several days.

Closed silos may contain lethal doses of carbon dioxide at any time. So take care!

Sweet clover is becoming popular, especially for green chopping. And some herdsmen are concerned about sweet clover disease.

But there's no reason to worry. This disease is caused only by spoiled forage.

A substance which prevents action of vita-

(Continued on Page 18)

EMPTY FERTILIZER BAGS can't poison livestock if they are immediately burned. To keep burning bags from blowing, secure them on a sharp stake.

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Project: Reclamation!

Experiment will help determine whether it is practical to convert phosphate mounds into citrus acreage.

SCARRED LAND, its face pock-marked by deep pits and unsightly mounds, has long been an eyesore throughout certain sections of central Florida.

Giant draglines, stripping off the top 30 to 50 feet of earth to get at the rich deposits of valuable pebble phosphate underneath, for years gouged out the pits and built up the mounds. But they may soon become a thing of the past.

One of Florida's larger phosphate companies is experimenting to determine if it's practical—and possibly profitable—to convert these man-made hills into citrus acreage. If the project is successful, thousands of acres of lush groves could replace presently unattractive land.

It will cost quite a bit of money to level these mounds and make them plantable. On the other hand, suitable land for citrus groves is getting scarcer . . . and more expensive . . . all the time.

Upon weighing both facts, executives of the company sponsoring the experiment decided to test their theory that grove land can be developed from leveled mounds at a cost well within the market value of reasonably good virgin land suitable for citrus planting.

Virginia-Carolina Chemical Company is making this experiment. Its land manager, William J. Menear, is the project supervisor.

A citrus grower with many years of experience, Menear owns some well-managed, highly-profitable grove acreage at Lake Wales. He is also a competent geologist.

"My job," says the supervisor, "is to see if it's practical and profitable to level these overburden mounds and turn the resulting land into producing citrus groves.

"This is a cold-blooded business proposition, one requires that we keep a strict check on every penny spent."

Selected for the first planting of citrus trees was mined-out land along the Clear Springs mine road, just south of Bartow. The project has two phases:

One involves a flattened ridge which was formed by knocking the top off a mound. This made a long, narrow planting area.

The trees along this stretch of several hundred feet (which is only 25 to 30 feet wide) are planted 16 feet apart. Later, if the trees are found to be too close together, every other one will be taken out.

Keeping the steep sides from eroding is, so far, the biggest problem posed by this narrow planted ridge. Enough space must be kept available along the ridge for the movement of fertilizing and spraying machinery.

Only time will tell, Menear admits, whether a grove along the top of such a ridge is practical.

Eight acres of flat land, formed by leveling three-year-old mounds and filling pits, comprise the second part of the project. This tract now looks like any new citrus grove.

Six hundred trees, spaced 25 feet apart, were put in this tract about the middle of February. The rootstock is two-year-old rough lemon with a one-year Valencia bud.

At planting time, the trees were given a generous application of fertilizer. Scientific soil analyses will be used to determine the further feedings.

Water is available, in the phosphate pools nearby, for irrigation when needed. These pools never go dry.

Holding as much promise as the leveled overburden tract, Menear believes, is another project still in the preparation stage. This involves developing a grove on land thrown up by the discharge of "tailings" from phosphate plant operations.

Ore dug out of the ground by the huge draglines is made up of almost equal parts of phosphate, clay, and quartz sand. The phosphate is removed as the ore is washed, sized, and otherwise processed.

During the processing, the clay goes to settling pools in the form of slime. The sand, mixed with water, is discharged through pipes which are moved around as the pile builds up.

Being conditioned for planting this fall is a 35-acre "tailings" tract in the Phosmico section,

(Continued on Page 18)

RESEMBLING ANY NEW CITRUS GROVE, the eight-acre tract of land below was formed by leveling phosphate mounds and filling pits. In the top photo, project supervisor William J. Menear inspects one of the trees planted in the experimental citrus plot.

Bel Air 2-Door Sedan—nothing so priceless anywhere near the price!

Some people still buy high-priced cars, but don't you wonder why?

No matter what you're willing to pay, you'll have a hard time finding any more car than this new Chevrolet wraps into one sweet, low-priced package. A relaxing ride, room to stretch out in, looks you can really be proud of—here's everything you'd expect in an expensive make. Plus the economy and dependability that have always been Chevy's specialty.

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Higher trade-in—consistently the highest of any low-priced car. Last year (based on official Guide Book figures of the National Automobile Dealers Association) Chevy averaged up to $128 more on used car lots than comparable models of the "other two." . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

CHEVROLET

Unmistakably modern in every lovely line!

Citrus Insect Control for Fall 1959

By
R. B. JOHNSON, W. A. SIMANTON, and W. L. THOMPSON*
Florida Citrus Experiment Station, Lake Alfred

RUST MITE, red scale and black scale have been the most important citrus pests this summer. Melanose has been much more abundant than usual on both leaves and fruit since spring due to the abundant than usual on both leaves melanose infection of leaves weakened them and undoubtedly is a factor in the excessive leaf drop observed in some groves.

Too much water in the root zone has weakened trees in groves that have not had the problem for many years. Wilting, leaf drop and root kill is now evident in several coastal locations and in a few interior groves.

Rust mite populations increased to a very high level in July and will continue high through August. Although a decline will prevail in September, subsequent increase is expected to keep rust mites abundant in October and November. During the fall months, rust mite infestations tend to be higher on fruit than on leaves and this point should be considered when checking groves.

Red scale, which has exhibited above average populations since last October, will continue to be a major problem in many groves this fall. Infestations of this pest are expected to vary greatly from grove to grove.

Black scale populations were the highest on record this summer and reached a peak in July. Where high populations were present sooty mold will be abundant due to honeydew excreted by the scales. Infestations generally will decline during the next two months. Young scales of the second generation will be seen in moderate numbers on leaves and stems this fall.

Chaff scale is expected to be more abundant than usual this year and groves should be watched for injurious populations which start to build up in September.

In previous years, purple scale has been a threat to a majority of groves throughout the year. This year populations are so low, due largely to parasite activity, that little trouble is expected.

There are indications that purple mite will be less abundant than usual during the remainder of the year. On the other hand, Texas citrus mite can be expected to be more prevalent. Frequent rains have helped to retard the purple mite problem during the first half of the year, but a dry fall could create trouble with this pest.

*Written July 24, 1959. Reports of surveys by Harold Holtsberg, Fort Pierce; J. W. Davis, Tavares; K. G. Townsend, Tampa; T. B. Hallam, Avon Park; and L. B. Anderson, Jr., Lake Alfred.

Spray Programs: There are three or four sprays of primary importance in any complete spray program. These should be applied after bloom, in the summer, during the fall, and, if necessary, in the dormant period.

The fall spray is primarily for mite control and should be applied when needed from September through December. August sprays are too early for maximum control of purple mite, Texas citrus mite, and citrus rust mite, but may be necessary for other purposes.

Rust mite, for example, is often an August problem where sulfur instead of zineb was used in the previous application or where coverage or timing of the zineb spray was inadequate. Regardless of the cause, rust mite should not be allowed to increase to large numbers even though control may require an extra application.

This year Florida red scale, black scale, chaff scale and, to a lesser extent, purple scale, may require control in August. If this is the case, scales and rust mite may be controlled with the same spray. If, on the other hand, rust mite alone is the problem, a sulfur dust or similar treatment is economical and should give control until time for the fall miticide application.

If neither rust mite nor scales are an immediate problem, the next spray should be delayed until needed for mite control.

Scale Control: Scalicide applications should be at a minimum during late summer and early fall. It is likely, however, that one or more species of scale will be a problem in some groves. Particular attention should be paid to red scale and chaff scale, especially in groves that have not been sprayed since June or earlier.

Red scale has been more numerous this year than usual and is most likely to be a problem in groves sprayed early in the summer or where there was a heavy infestation at the time the scalicide was applied. Even though the lower areas of large trees may be comparatively free of scale, the tops should be checked because coverage and scale control is usually not as thorough in tree tops.

Chaff scale increases rapidly from August through October and causes green spots on fruit that will not degreen in the coloring room. Inspect tangerines and early varieties of oranges carefully because young chaff scale are rather inconspicuous on green fruit. If fruit is found to be infested with either chaff or purple scale, the grove should be sprayed at once to prevent further infestation and more reduction in grade.

This year, black scale is a problem in some groves and is an indirect cause of sooty mold. Where control is necessary, apply the scalicide by the middle of August or before the scale is mature, because the older stages are difficult to kill. The sooner the scale is killed, the less likelihood there is of excess sooty mold. Any of the scalicides used for purple and red scale control are effective if applied when the scales are in the young stages.

One-fourth pound of technical parathion or 1 to 1.25 pounds of technical malathion per 100 gallons are the preferred scalicides for August or later applications. Neither of these materials depress soluble solids in fruit juice, or are as likely to cause as much leaf drop as oil emulsion.

Sprays containing oil are not desirable later than July. Oil is most likely to depress soluble solids and retard degreening of fruit when applied in August, September, or October. Furthermore, if oil was applied at any time during the summer, a second application made from August through October will have a greater adverse effect on solids and color than a single application. Under no condition should tangerines be sprayed with oil after July, because it will prevent the development of good color. Trees sprayed with oil in October or later are more susceptible to cold injury and sometimes do not put out the normal amount of bloom the next spring.

SCALE AND MITE ACTIVITY BY DISTRICTS*

District	Purple Scale	Red Scale	Purple Mite	Rust Mite on leaves	Black Scale
West Coast	2.89	3.22	1.11	3.11	5.12
Indian River	1.09	4.08	1.54	1.89	4.86
Upper East Coast	2.00	.50	2.00	3.50	4.00
Gainesville	0	2.00	1.00	0	0
Orlando	1.92	3.00	.91	1.10	2.32
Brooksville	1.08	3.61	.31	2.08	3.79
Ridge	3.70	4.18	2.32	2.88	5.13
Bartow	3.13	4.48	.13	2.57	3.38
State Average	2.98	3.78	1.27	2.27	4.18
Last Year	4.97	3.16	2.11	1.84	2.53

*Second week in July. Activity is computed from populations, amount of hatching of scales, and number of groves with increasing or decreasing infestations. Activity is considered high if above 4.0 for purple scale, 3.0 for red scale, and 1.5 for mites.

Mite Control: The aim of the fall mite spray, applied from September to December, should be to control citrus rust mite, purple mite, and Texas citrus mite until after bloom the following spring. Although such an interval of control cannot be guaranteed, there are ways a grower can enhance his chances of such success:

First, he should select the miticide or combination of miticides most suited to the problem. Second, he should delay the application as long as possible but not after more than 20 percent of the fruit or foliage is infested. And third, he should apply the spray thoroughly enough to cover all fruit, leaves, and green twigs.

The selection of the miticide or combination of miticides should be based partly on previous treatment and partly on the species of mites that are present.

If sulfur was used in the summer, rust mite is likely to be more numerous, more injurious and more difficult to control in the fall than if zineb or Chlorobenzilate was applied. In this case, the most effective rust mite miticide, zineb, should be used at 0.5 to 1.0 pound per 100 gallons of spray. Chlorobenzilate at 0.5 to 1.0 pound of the

(Continued on Page 24)

Don't Poison Your Livestock

(Continued from Page 13)

min K is formed when mold grows in sweet clover. This occurs also in other hays, but to a smaller extent.

Usually, toxic levels are found only in moldy sweet clovers. If not moldy, sweet clovers are excellent feed.

There is a danger in green chopping and in strip grazing which doesn't apply as emphatically to extensive grazing systems.

Frequently, poisonous weeds—including night shade, some varieties of the coffee weed, lupines, and crotalarias—are found in pastures.

When there is plenty of other feed, not many of these weeds are eaten. And the few that are consumed usually are not harmful because the poisons they contain are well diluted.

But in strip grazing or green chopping, almost complete consumption occurs. Thus death from poison weeds becomes much more likely.

Prevention is affected by frequent examinations, clipping, and (when necessary) spraying with the proper herbicide for the type of pasture concerned.

Even in large pasture areas, there is some danger from poison weeds unless the desired type of forage is in generous supply.

In addition to noxious plants already mentioned, cattle have suffered from eating sorrels and docks which contain oxalic acid and from wild cherry trees containing poison glucosides.

Some essential nutrients are toxic when not administered properly:

All animals need salt, and cattle can eat as much as a pound daily without harm. But if livestock have been deprived of salt for long periods, they may consume lethal doses when given free access.

This occurs most often in pigs and chickens. However, cattle also have died from poisoning by common salt.

Occasionally, salt is mixed with protein supplements to limit intake of the latter by range cattle. Although this causes consumption of considerably more salt than is needed, no danger occurs if feeding is done close to a reliable source of water.

Supplementary mineral mixtures containing iron, copper, and cobalt are necessary for livestock on most Florida soils.

Because muck is very high in molybedenum, copper requirements for cattle grazing on this type of land are very high. Thus a special high copper mixture is recommended for these areas. (*Florida Bulletin 513*).

If cattle consistently maintained on mineral soils consume this special mixture for long periods, they can become ill or die from copper poisoning. (Copper resembles lead in that it can build up slowly to a toxic level in the body.)

On the other hand, if cattle on peat soils do not receive the special mixtures, they will suffer from molybedenum poisoning.

Mineral mixtures are essential. But be sure to use the right one.

All classes of livestock are subject to cumulative poisoning by fluorides. Thus herdsmen hesitate to use rock phosphate because it contains some fluoride.

However there's no reason for this concern: The fluoride content of rock phosphate for feeding purposes is treated to remove most of the toxic substance.

Between 30 to 60 parts per million in the total ration are not harmful. And there's no reason to even approach this figure when using good rock phosphate feed additives containing not more than .2% fluoride.

Farm animals are curious creatures. Often they nose around and lick machinery which may be left in pastures.

This sometimes leads to ingestion of grease and other lubricants. These may cause harm directly, as in the case of skin troubles from chlorinated napthalene additives.

In addition, molybedenum—which may interfere with mineral metabolism—also is added to some lubricants in amounts which could be toxic.

Skeet shooting provides good gun-safety training for children, and it's fine recreation for anyone. But clay pigeons are poisonous to livestock:

Most animals but pigs especially like to pick up clay pigeon fragments in target-practice sites. And many animals have died from poisoning by the tars contained in them.

Just do your skeet shooting in a special area not accessible to the livestock and avoid possible problems.

From the above, it's easy to see that livestock can be poisoned accidentally—perhaps more often than their owners know. But it's also easy to see that close observation and management can eliminate most accidental poisoning of farm animals.

behind the Bartow air base. This is joined to another 15 acres in virgin land, making a 50-acre piece of property which will be turned into a citrus grove.

"The 'tailings' are almost pure quartz sand," Menear explains, "except for possibly 5% phosphate which still remains after processing. It will be almost like growing citrus hydroponically as the quartz sand has no nutrients in it and we will have to feed the trees what we want them to have.

"However, that doesn't bother me. My own grove at Lake Wales is on much the same kind of pure sand and I've learned how to make it produce fine crops.

"I believe it can be done on this 'tailings' tract too. The 15-acre tract of virgin land will be helpful for comparison purposes."

Adjoining the proposed 50-acre citrus grove is one which has been producing heavy crops for many years.

First analysis reports, reveals the citrus-growing geologist, verified his conclusions about the soils on the knoll and the flat acreage.

Scientific tests of soils from along the high ridge showed a pH of 6.0 with a content of phosphate, as expected, called "good." The potash content is "fair"; magnesium, "good"; calcium, "fair."

Even better read the analysis of the eight-acre tract. It showed a pH of 5.8. Phosphate, potash, and magnesium were all reported "good." The calcium content, however, was found to be only "fair."

As expected, the nitrogen content of both tracts was low—reflecting the lack of humus. To remedy this, Menear hopes to have a lush cover crop of hairy indigo or crotalaria before too long.

Project: Reclamation

(Continued from Page 15)

Profitable citrus culture is possible—at least, to a degree—on Florida's mined land.

Chester McDonald of Lakeland has proved this. He recently reported that his 12-year-old trees, planted on overburden land, are bearing six to eight boxes of seedling fruit annually.

McDonald purchased the 117-acre tract on which the seedlings are bearing from Coronet Phosphate Company. The land had been mined prior to 1943.

At first, McDonald experimented with only 12 seedling plantings. But he soon increased the acreage to 40.

Next, he decided that the lower land surrounding the seedlings would be good for grapefruit. So he also planted 15 acres to that crop.

Two large lakes with natural lake qualities were on the mined land. These lakes furnish permanent irrigation for the overburden plantings and for more than 400 other citrus acres (near Mulberry) which McDonald and his father own.

Reclamation problems encountered during the small-scale and the large-scale experiments, admittedly, have been slightly different:

McDonald's overburden contained only one peaked mound. And he was able to reclaim 40 acres in one grove.

Other than building up the nutritional qualities of the soil, McDonald's major problem was the clearing of underbrush and the removal of a few pine trees. No leveling was done.

V-C, on the other hand, has been faced with many land pyramids to be leveled and pits to be filled. The prevention of erosion on steep slopes has also been a problem.

Furthermore, some difficulty was encountered in the planting of trees. This was because the top soil in some areas was so hard that drills had to be used to make holes for the roots.

Most phosphate companies own producing groves. These, however, were acquired in normal land-purchasing operations.

Consequently it is believed that V-C's project is the only extensive citrus growing experiment on leveled spoil banks or land made from "tailings."

Other phosphate companies are watching this experiment with deep interest; they also are anxious to find a profitable way to utilize mined-out land. Menear declares:

"If it works, this experiment could solve one of the industry's most expensive problems."

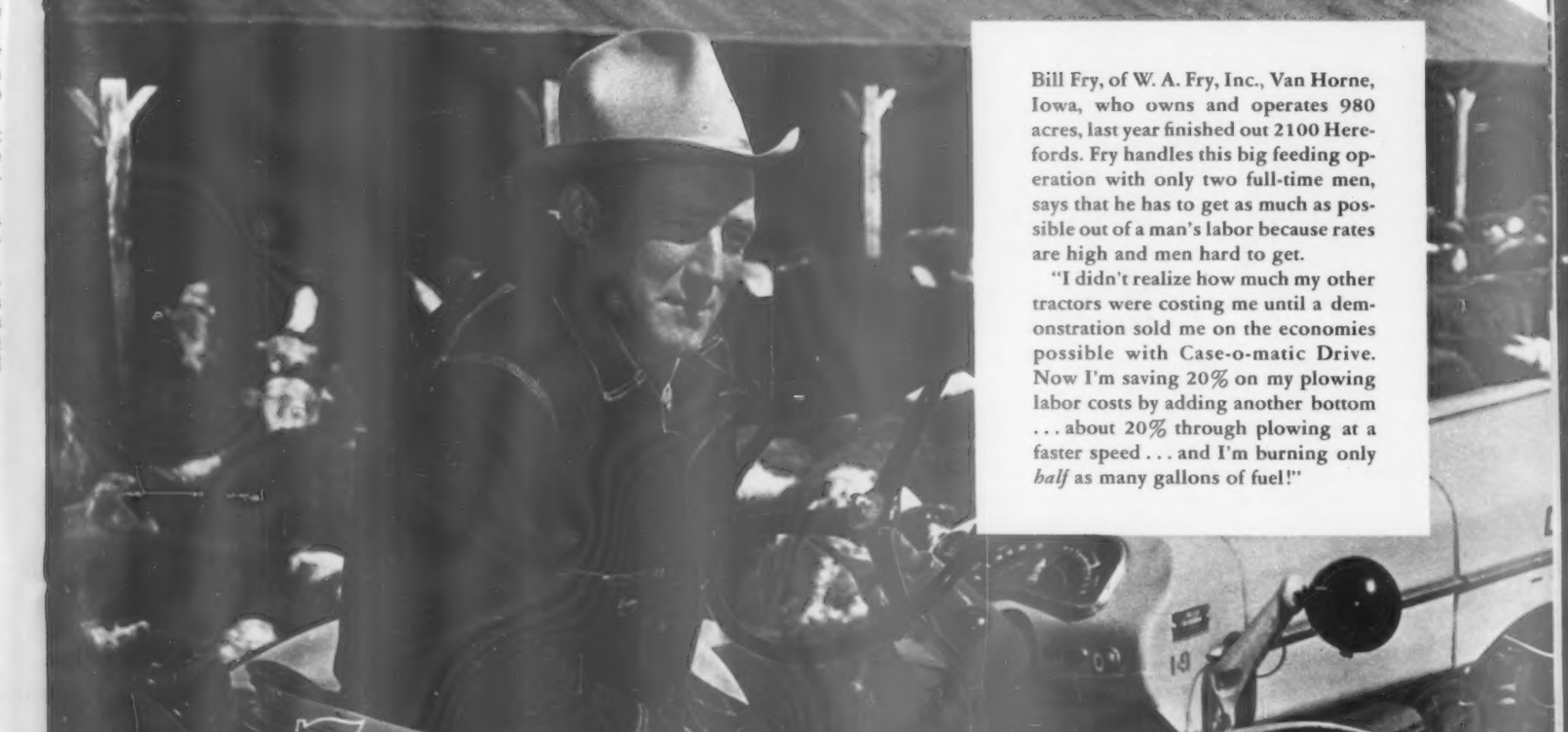
But the project supervisor isn't counting on getting $3 a box on-tree for oranges for his citrus grove to make money. He points out:

"Such prices cannot continue indefinitely. I'm basing my expectations (for a profitable grove operation) on being able to sell oranges for $1 a box on the tree . . . maybe even a little less.

"If we can get more than that, fine and dandy. But, with the size of the Florida crops increasing every year, we've got to be realistic about price prospects for citrus fruits."

"I spent an hour for a demonstration - and it paid off plenty...

"My Case-o-matic DRIVE 800 Diesel saved me 40% in plowing labor...68% on fuel!"



Bill Fry, of W. A. Fry, Inc., Van Horne, Iowa, who owns and operates 980 acres, last year finished out 2100 Herefords. Fry handles this big feeding operation with only two full-time men, says that he has to get as much as possible out of a man's labor because rates are high and men hard to get.

"I didn't realize how much my other tractors were costing me until a demonstration sold me on the economies possible with Case-o-matic Drive. Now I'm saving 20% on my plowing labor costs by adding another bottom . . . about 20% through plowing at a faster speed . . . and I'm burning only *half* as many gallons of fuel!"

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Hook a Case-o-matic Drive tractor onto your PTO-driven baler, chopper, combine or corn picker . . . find some heavy stands or windrows. Through thick or thin, uphill or down see how independent PTO with priority on engine-power maintains constant PTO speed . . . gives you full PTO power. Even in soft ground or heaviest uphill going, PTO speed stays up for top PTO operating efficiency. No clutching, no shifting, no stalling! You'll bale, chop, combine or pick more crop every hour—and you'll do a better job, too.

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Try a Case-o-matic Drive tractor at part throttle for close, accurate cultivation of tiny, delicate plants. Notice how you have *full-time* tip-toe accelerator control of speed . . . how you can slow down to a crawl in any gear range without stalling. Flip into direct drive for the "stretches," back to torque converter for safe, easy brake turns at row ends. Precise accelerator-and-brake control saves time and temper in hitching, or in and around buildings. And with a Case-o-matic Drive tractor you can ease a loader *firmly* into its work —without slipping the clutch or ramming.

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310 Hi-torque 42 gross horsepower* Case gasoline engine with 3-speed transmission. Available with hydraulics, PTO, belt pulley, toolbar-dozer combination, 3-point hookup or Snap-lock Eagle Hitch.

810 80 gross horsepower*, diesel engine Terramatic Drive transmission. Independent power control of each track. Four gear ranges forward and reverse. Dual-control hydraulics. Toolbar-dozer combination available.

*Sea level (calculated) maximum horsepower (based on 60°F. and 29.92" Hg.). Manufacturer's rating.

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700 4-5 Plow Tractor; diesel, gasoline, LP-gas, distillate fuel; 8-speed dual-range transmission; standard 4-wheel, row-crop with single or dual wheels, adjustable front axle; dual-control hydraulics and Eagle Hitch.

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1958-59 Season Report:

Florida Citrus Growers Receive Record Price

DURING THE 1958-59 season just concluded, the Florida orange grower sold his crop for $230 million on the tree—and pocketed $165 million of that as net profit before taxes.

This is by far the greatest gross amount ever received for a Florida orange crop. By the same token, it is also the biggest net profit ever realized by the Florida orange grower.

Broken down still further, the average acre of orange grove brought its owner a net profit of $410 before taxes. (Florida has approximately 400,000 acres of bearing orange groves.)

Such figures indicate why good orange groves have been selling as high as $5,000 per acre. They're a good investment, even at that high price . . . as long as they bring in a profit of between 8 and 10%.

Frozen concentrators paid an average of $3 per box on-tree for the oranges they bought during the season. This was a record high price.

In addition, the concentrators bought more oranges and put up more concentrate than ever before. They used 52.5 million boxes to make just a shade less than 80 million gallons of concentrate.

Another 16 million boxes of oranges from last season's Florida crop went into cans as single-strength juice, the new and growing full-strength chilled juice, for blending with other citrus juices, and in making salads.

Combined, the over-all total utilization of oranges in various ways by such plants amounted to 68.5 million boxes. This was 80% of the estimated crop of 86.5 million boxes.

Total orange production is a long way from a record, the shortened crop reflecting the freezing weather which hit the state during 1957-58 season. The year before the freeze, Florida produced 93 million boxes of oranges and seemed headed for a crop of 100 million or more boxes when the cold weather reversed the upward trend—at least temporarily.

Establishing a new all-time record for the number of dollars paid for a single crop, Florida orange, grapefruit, and tangerine growers received approximately $275 million on the tree for their crops in the 1958-59 season.

(The former record was set during the freeze-stricken 1957-58 season, when total on-tree returns amounted to $218 million.)

All of the figures given here, of course, are "averages." They may not agree necessarily with the returns of any particular grower.

Many growers undoubtedly didn't get quite as much as these averages for their oranges or other citrus fruits. Some got even more.

What a grower finally is able to call "clear profit" will also depend on what he has to put out for federal, state and county income and other taxes. And it costs some growers more to produce their fruit than it does others.

Grapefruit growers didn't fare as well financially as their orange-growing brothers. But they still made a neat net profit of around $200 per acre, before taxes, on the 108,000 acres devoted to this fruit.

The grapefruit crop of 35.2 million boxes brought approximately $37 million on the tree. This was about $1 a box.

It cost the average grapefruit grower 40 cents a box to grow his crop, or an over-all total of $15 million for the entire crop.

Amounting to only 4.5 million boxes, the tangerine crop represented a total on-tree return of approximately $8 million last season. This was just under $2 a box.

Few growers expect the almost fantastic orange prices which prevailed last season to continue. Unless, of course, more freezing weather comes along to keep production below marketing needs.

Just the same, it looks as though growing oranges in Florida will continue to be a highly profitable business for several seasons.

It is far too early to make any predictions on the size of next season's Florida crops. But some idea of the trend can be obtained from Uncle Sam's "condition" figures. These are issued monthly during the Summer and until the first estimate in boxes is made on October 10.

Latest "condition" figures (July 10) give early and midseason oranges only 55 points. Last year at this time, they were given 57 points; the average for the 10-year period of 1948-57 was 72 points.

Valencia oranges get a much higher condition rating—63 points, compared with 57 a year ago and a 10-year average of 70.

Tangerines are given the extremely low rating of 43 points. Last year they received 66 points; the 10-year average was 62 points.

Grapefruit prospects are much less promising than last year. The common seeded variety is rated at only 46 points, compared with 61

(Continued on Page 33)

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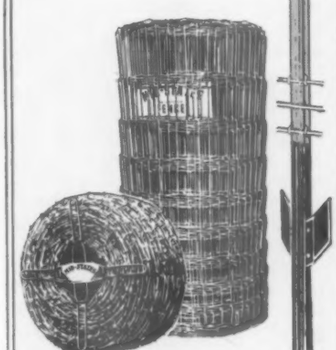

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Citrus Pest Control *(Continued from Page 17)*

powder or 0.5 to 1.0 pint of the liquid formulation may be substituted for zineb.

If purple mite and Texas citrus mite control is also desired, the most effective purple mite miticide, Tedion, should be included in the spray at 0.5 pound per 100 gallons. Tedion, however, has not as yet been approved for use on fruit and should be confined to non-bearing trees or to groves where the fruit has been picked.

Trithion at 1.0 pound of the powder or 0.5 pint of the liquid formulation or 1.0 to 1.5 pound of Kelthane, although effective for a shorter period, may be substituted for Tedion.

If zineb or Chlorobenzilate was used in the summer spray instead of sulfur, zineb is not so essential in the fall. Excellent control of rust mite may be obtained with Chlorobenzilate, Trithion, or 10 pounds of wettable sulfur. Trithion will also control purple and Texas citrus mites, but Tedion, Kelthane, Systox, or DN Dry Mix No. 1 should be included if sulfur or Chlorobenzilate is used against rust mite.

Any of the above miticides or combinations may be used with parathion or malathion for combined control of mites and scales.

The time of application is important. The later in the fall a spray is applied, the greater the chances of control lasting until after bloom.

Although an early spray may last just as long as a late spray, it may not last until after bloom the following spring because of the greater interval between time of application and post-bloom. On the other hand, the effectiveness of any spray depends as much on the completeness of initial kill as it does on residual action.

In general, the higher the mite population at the time of application, the poorer the initial kill and the shorter the period of control.

Sprays should not be delayed too long. A good policy is to spray when about 20 percent of the fruit or leaves are infested. This means that sprays to control rust mite, purple mite and Texas citrus mite should be applied when about 20 percent of the fruit or leaves are infested with one or more of these species of mites. This recommendation applies to the interval from late September through December, but it does not necessarily apply to August.

August applications are usually too early to give control until post-bloom and should be considered as extra applications to give a short period of control until the regular fall spray can be applied. Sulfur dust for rust mite, Trithion dust for rust mite, purple mite, and Texas citrus mite, and aerial applications of Trithion, Systox, or TEPP for purple and Texas citrus mites are suitable for this purpose.

With the exception of sulfur, none of the miticides used on citrus have any appreciable fumigating action. All of them kill by contact with the mite. Miticides that are not applied thoroughly enough to contact the mite are of no value.

Since mites occur on leaves, fruit and green twigs, it is essential that sprays be applied thoroughly enough to cover all of these areas. It is the only way to prevent poor results or out-and-out failures.

Details of spray schedules and the various materials used will be found in the "Better Fruit Program" and this should be consulted to determine which materials may or may not be combined. For further information, consult the Citrus Experiment Station at Lake Alfred or Fort Pierce.

What you should know about wind machines for proper frost protection

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Six to eight horsepower per acre is a minimum requirement for safe frost protection. This figure has been substantiated by all published findings. Machines employing two fan blades must have engines that can deliver proper horsepower to each fan. For example, a wind machine with a single eighty horsepower engine and two fan blades can deliver no more than forty horsepower on each fan.

Large Diameter Fan Blades Are Important

The longer the fan blade the bigger the jet of warm air that is moved into the grove or orchard. Small propeller-type blades cannot move the volume of air longer blades are capable of. Turning at 590 rpm (recommended speed for best results) these longer blades produce 25% more air in the grove or orchard than the propeller type.

Buy Only a Proven Machine

There have been many wind machines built. Most types have come and gone. As a wind machine buyer, be skeptical of any machine that has not fully proven itself during a freeze. A wind machine that has not performed under severe freezes and in a number of different locations is a risky purchase.

Let Trained Personnel Help You

Terrain, wind drift, closeness of planting, and height of trees are all important factors to be studied before proper installations can be made. Qualified factory field engineers are available to study your groves and make recommendations. This service is made without charge or obligation.

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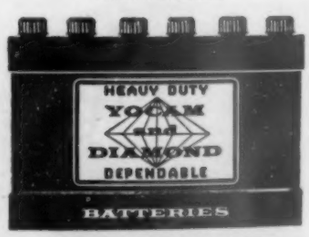

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Statistics Show Extent of Cold Damage to Crops

FLORIDA's 1957-58 winter vegetable and melon crops, USDA and University of Florida statistics confirm, were extremely hard hit by cold damage.

Vegetables and melons for that season were planted on 440,150 acres. However harvest was made on only 369,950 acres, a loss of 70,200 acres.

Crops for that season grossed $132,181,000 for Florida farmers. This total was $31 million less than the 1956-57 figure and some 27% (or $51 million) below the 1954-55 record of $184 million.

Tomatoes, by far the season's top money-makers, grossed $30,063,000.

Celery, with a $17,255,000 gross, was a poor second.

Other 1957-58 figures, by crops, included:

Irish potatoes, $15,727,000; snap beans, $14,017,000; peppers, $11,432,000, and sweet corn, $11,064,000.

Watermelons, $7,744,000; cucumbers, $7,599,000; cabbage, $6,246,000; escarole and chickory, $3,630,000; squash, $2,605,000; eggplant, $1,535,000, and lettuce, $1,512,000.

Strawberries, $675,000; lima beans, $514,000; cantaloupes, $353,000; caulifflower, $153,000, and spinach, $57,000.

Figures on green cowpeas, okra, and miscellaneous greens were not available.

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Living in Florida

By BARBARA CLENDINEN

A NEW BATHING SUIT and a full-length mirror can be a woman's best friend. When sheaths and scales fail to coax her into exercising, the shock force of swim suit and mirror can do the trick.

This flight from the frightening view isn't easy. It means a retreat from the 10 o'clock cold drink . . . the whipped cream dessert . . . the second hot biscuit. And it means sticking with a stern schedule that allots 15 minutes every morning for exercise.

You'll have to bar the bedroom door, ignore the telephone, and tell the dishes to wait. Because if *you* wait until you've no other chore, the mirror's story at summer's end will still be an unhappy one.

One quarter of an hour daily will redistribute your weight within a few weeks, taking inches off waistline, hips or bust. That's a gay, giddy thought to carry you through the initial soreness.

If you've been ill, or have had an operation recently, check with your doctor before attempting the exercises described below. But if you're in good health, stretch those bulges into slim lines this way:

Stand with your back to a wall and your feet four inches away from the wall. Stretch your left arm up the wall as if you were trying to climb; then stretch your right arm in the same manner. Repeat 25 times. This pulls the torso muscles and whittles heavy upper arms.

A variation of this has a nice, aesthetic touch: Remain with your back against the wall and stretch your right arm forward toward the ceiling, as if you were plucking a bunch of grapes just out of reach. Repeat with your left arm, alternating arms five to 10 times.

Just imagine you're in a scuppernong grape arbor with blue sky above and the breeze ruffling your hair . . . and you'll stretch happily.

Here's another good one: Stand erect with your arms at your side. Then, holding your chest high and your chin in, make an effort to push your head up to the sky. Repeat 10 times. This takes a bit of doing, but it's well worth your while.

To reduce stomach and hips—the worst part of that mirror's vista—try this:

Lie with your back flat on the floor. Keeping your feet on the floor, bring your knees up toward your torso. With your shoulders tight on the floor, roll so that your right knee touches the floor on your right; then touch your left knee to the floor on your left. Repeat 25 times with each knee.

Spending the clothing dollar

℞ for Serene Shopping

By LORA A. KISER

SUSIE STARTS TO SCHOOL next month, Steve's in the fourth grade, and daughter Mary is a junior high school student.

They all need crisp, new clothes. And the cost is staggering to contemplate!

Understanding, however, is one of the great steps in keeping the lines of communications open between the generations. So the best way to brighten their wardrobes without casting a shadow over your budget for months to come is to call a family conference and plan this step together.

You'll save time and energy (*you* know how arguments with a teenager can debilitate a mother!) and you'll achieve more for the money invested. Most important of all, the children will have a better understanding of family problems.

Specify the family income. Discuss it in a way the children will understand. Show them that a set amount must go for food every month. Outline the other amounts which have to come out of every month's income: rent or house payments, car payments and upkeep, taxes, insurance, dry cleaning, essential services, etc.

When the children see the total, they'll begin to realize why the clothing dollar must be spent wisely and carefully.

Make a simple form for each child and help him take an inventory of his closet. Decide together which items of clothing on hand are all right for school, or can be altered or freshened. Then help them plan a list of what each will need—dresses, blouses, pants, shoes, socks, sweaters—to supplement the supply on hand.

Before starting on the actual shopping trip, talk things over. Consider their likes and dislikes. You'll avoid a scene in a shop if you've already conceded that Mary wouldn't be caught dead in a sheath skirt.

New clothing should harmonize in colors with the old. Consider, too, comfort and suitability. School clothes should be simple but attractive. Now's the time for Susie to learn that she doesn't wear her last year's Sunday School organdy to school.

For the younger children, too, it's best to remember that too much trimming—sashes, many pockets, and frills—can be a safety hazard.

Also, think of yourself. You'll want to select materials that resist soil and are easy to wash and iron. Drip-dry cottons, knitted garments, seersuckers, and blends like 65% dacron and 35% cotton are lifesavers for busy mothers.

Darker prints, plaids, and strips are also a mother's friend. They don't show soil or wrinkle easily.

Teach your children to look for well-cut, well-made clothes. Plaids and stripes should match exactly; design should be good, seams set in well.

Now you've taken care of all the preliminaries. You should be ready for a shopping trip with a family aware of the value of a dollar, informed as to their needs, and conscious of the colors and types of clothes they want.

Under these circumstances, shopping can be serene—and might almost come under the label of "fun," provided you stay calm and the indoctrination lasts the length of the trip.

Best of all, you've planned it all together. And that's a good family feeling!

YARD & GARDEN

By Marguerite Schwaen

The simplest garden turns into an enchanting place as darkness closes in and striking lighting effects create dramatic shadows and vivid silhouettes.

In brilliant sunlight, a garden may be untrimmed and shaggy. But all the daytime limitations disappear when night lights burn. Every blade of grass looks green, and faded flowers bloom anew.

Such magic is possible for your garden. A wide range of lighting units, including all types of mercury vapor-sealed beam and screw-in incandescent lamps, is sold almost everywhere. All are weatherproof. And, with normal use, they do not generate sufficient heat to harm even the most delicate plant.

All too often, the amateur's idea of landscaping is a pair of high wattage floodlights mounted on each corner of the house. The glare that results, covering the entire outdoor area indiscriminately, would suit a parking lot more than a garden.

Smaller wattage lights, placed strategically with controlled light falling on noteworthy areas, create a much more pleasing effect. Colored glass filters can reproduce the natural daylight beauty of flowers, create rainbow effects in a fountain, or lend a party feeling to a patio.

More than 50 different shades and tints are available. A pale green filter brings out the beauty of green foliage; a light pink one enhances red flowers. These filters are fadeproof, weatherproof, and long-lasting. By combining basic colors, lighting experts can create an unlimited variety to enhance the garden after dark.

Pinpoint your display by lighting a favorite clump of flowers or a spectacular single blossom with an effective lamp which throws a bright, controlled beam on a small area. Such a lamp is no larger than a pineapple, operates on low voltage, has an extremely long life, and is maintenance-free.

Wiring usually is installed underground from house to outlet points. A new plastic material called "neoprene" permits electric wires to be laid directly in the ground, protected from water, acid, and soil chemicals.

To facilitate the use of equipment on a nearby terrace or garden, weatherproof outlets can be installed on the outside of the house.

Lighting can be planned ahead, along with the landscape design. Lay out the wiring and outlets on paper, and incorporate them in the garden plan. Then it won't be necessary to dig up the lawn or disturb flower beds after landscaping has been done.

Night lighting often creates a problem by attracting pesky insects. There are several kinds of insect-repellent lights on the market—but most of them, such as the yellow bug lights, are merely less attractive to insects than white lights.

EFFECTIVE LIGHTING makes her screened pool and patio the ideal place for informal entertaining, reports Mrs. C. B. Scofield of 1018 South Clearview, Tampa.

Such lights don't really repel insects—they merely distract those of a timid nature.

One effective insect control is an ultra-violet unit called the "insect-outer." It is usually hung on a tree or fence in an unfrequented area to attract phototropic or light-sensitive insects away from the living area. A filtered black light force attracts the insects, and they are killed by contact on electrified grids.

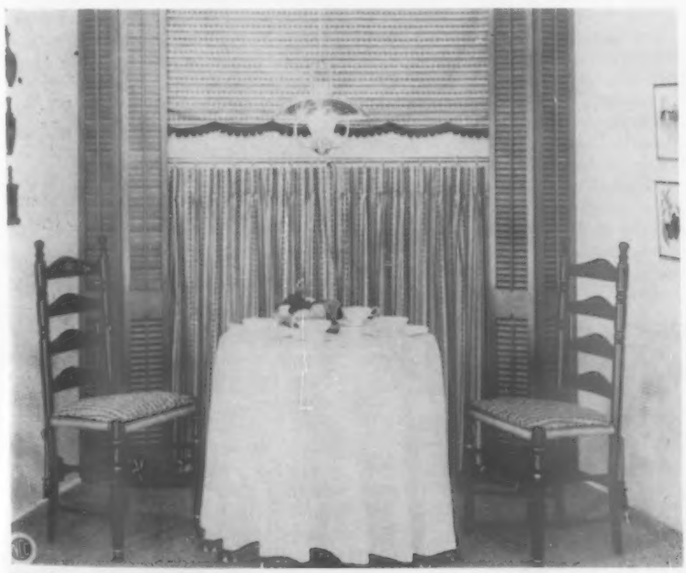
This unit is safe for humans. Current consumption is low, about 90 watts. And the black light fluorescent tubes last about 7,500 hours.

Several important light safety practices should be heeded:

Use waterproof wiring and equipment for all outdoor installations. Insulate thoroughly. To avoid cutting the insulation when spading the garden, trench the wire; then cover it with gravel and a board.

Record the location of underground wiring on a diagram.

Never change outdoor lights while they are still hot. Standing on damp ground while working with live electric connections can result in a painful shock.



Dining Corner With A Flair!

Cafe curtains of a geometric cotton print hang full length from brass rods and rings beneath a swish window shade of the same cotton print. Black ball braid trims the circular table cloth (*very* new!) and the window shade. The black ladder-back chairs can be lacquered at home; the full-length pine shutters can be finished by your lord and master.

Diet Kitchen

Crisp, green salads can brighten supper menus these hot August evenings. And even the patient on a low-cholesterol, low-fat diet can enjoy a savory dressing made with a salad or cooking oil.

The piquantly-flavored salads below have been approved by nutritionists working with low-cholesterol diets. What's more, they'll fit right into the reducer's program too.

Tossed Salad

- 1 teaspoon salt
- 4 tablespoons corn or vegetable oil
- 1½ tablespoons vinegar
- ¼ teaspoon Worcestershire sauce
- ¼ teaspoon prepared mustard
- ½ clove garlic
- few grains pepper
- 1 quart assorted salad greens

Combine all ingredients, except greens, in wooden bowl. Beat with fork until thoroughly mixed. Add crisp and well-drained salad greens, broken into bite-size pieces. Toss lightly until all greens glisten. Serve at once. Makes 4 servings.

Carrot and Raisin Salad

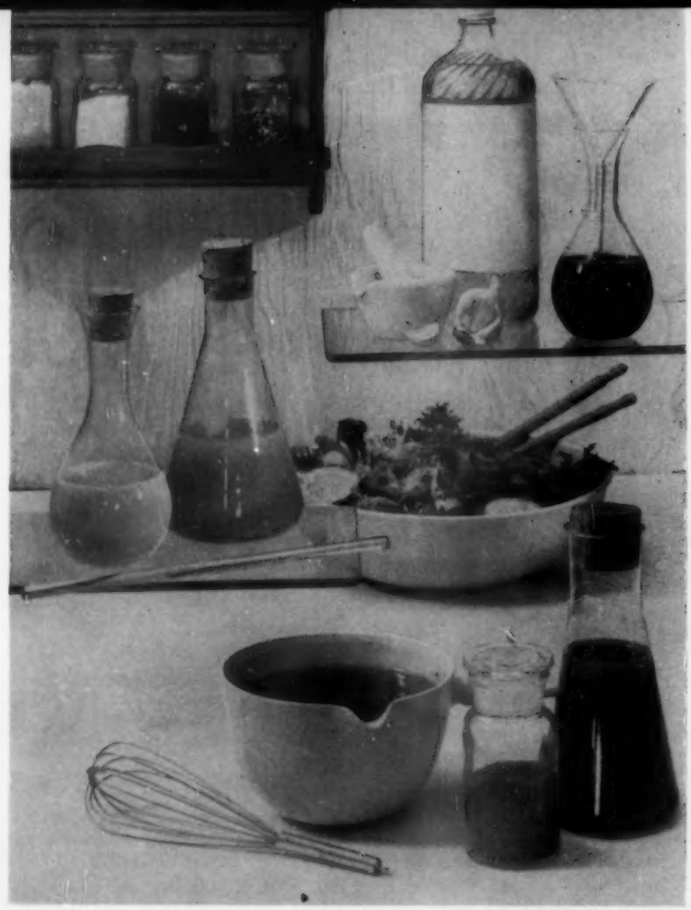
- 1 tablespoon sugar
- 1 teaspoon salt
- 2 tablespoons vinegar
- 2 tablespoons corn or vegetable oil
- 4 medium-sized carrots, grated
- ½ cup raisins

Combine sugar, salt, vinegar, and oil in bowl. Beat with fork until well mixed. Add carrots and raisins. Toss lightly to mix thoroughly. Makes 4 servings.

Green Bean Salad

- 2 cups (1 lb. 13 oz. can) green beans, drained
- 3 tablespoons vinegar
- 1 tablespoon sugar
- 1 teaspoon salt
- ¼ teaspoon pepper
- 1 tablespoon chopped scallion
- 1 tablespoon chopped green pepper
- 1 tablespoon chopped pimiento
- 1 tablespoon corn or vegetable oil

Combine ½ cup liquid drained from beans with vinegar, sugar, salt, and pepper. Pour over mixed vegetables and marinate at least 3 hours. Drain. Add oil and toss until vegetables glisten. Makes 4 servings.



BRIGHTEN SUMMER SUPPER MENUS with a crisp, green salad. (See "diet kitchen" recipes on page 27.)

BEST RECIPE OF THE MONTH

GUAVA RECIPES galore poured into our mailbasket this month. Because there were so many marvelous recipes, we selected two honorable mentions, in addition to the first and second prizes.

Luscious eating's ahead if you clip these recipes!

Cloudlike, crispcrusted and fragrant with crushed guavas is our first prize winner. Mrs. C. M. Murrill, Plant City, is the source of this airy, tropical pastry.

Guava Chiffon Pie

2 cups fresh guava pulp
4 eggs
1 tablespoon (1 envelope) plain gelatin
¼ cup cold water
1 tablespoon lemon juice
¼ teaspoon salt
¾ cup sugar

Wash guavas, peel, cut in half, remove seed pulp. Run shells through sieve to get 2 cups pulp.

Combine egg yolks, slightly beaten, with ½ cup of the sugar, strained pulp, lemon juice and salt. Cook over boiling water until mixture is of custard consistency. Remove from heat.

Sprinkle gelatin over ¼ cup cold water. When dissolved, add to hot custard; stir until well mixed; cool. When mixture begins to stiffen, fold in stiffly beaten egg whites to which other ¼ cup sugar has been added.

Soon it will be time to think of school again. Just to show us how foresighted you are, tell us your favorite food for the Hallowe'en carnival or the PTA supper you'll plan in October.

Do you have a sure recipe for pronto pups, an easy way to candy apples, a special fudge that sells like crazy? If so, mail it to us—by August 28—for our October issue.

Send it, with your name, address and phone number, to:
Best Recipes Contest
FLORIDA GROWER & RANCHER
Box 2350
Tampa, Florida

If your recipe's best, we'll send you $5. Second prize is $2; honorable mention, a three-year subscription for yourself or a friend.

Pour into a baked pastry or graham cracker shell.

Chill, then serve.

"Spicy" is the word for our second prize-winning recipe. It was sent in by Mrs. Helen Draughon of Okeechobee.

Guava Brown Betty

1 cup sugar
¼ teaspoon cinnamon
¼ teaspoon nutmeg
1 teaspoon grated lemon rind
2 cups bread crumbs
¼ cup butter
¼ cup water
3 tablespoons calamondin or lemon juice
2 cups guavas, seeded and cut into small pieces

Blend sugar, spices and lemon rind. Mix crumbs and butter lightly with fork.

Cover bottom of buttered pudding with crumbs, add ½ of the guavas, sprinkle with sugared mixture. Repeat process. Cover with remaining crumbs. Mix water and juice, pour over.

Dot with butter. Bake at 350 degrees for 45 minutes (cover first 20 minutes to keep crumbs from browning too fast). Serve warm with cream and sugar. Serves 8.

Our first honorable mention award goes to Mrs. O. W. Prevatt of Jacksonville for this delightfully different fruit salad:

Guava Salad

2 cups guavas, cut into pieces
2 cups orange sections
½ cup shredded coconut
lemon juice
mayonnaise
chopped pecans

Peel guavas, remove seed, cut into pieces. Marinate in lemon juice to prevent darkening. Toss lightly with other ingredients, turning carefully to avoid mashing fruit.

Serve in nest of lettuce with sprinkling of chopped pecans on top. Serves 4 to 6.

This two-crusted pie laden with whole sugared guava shells won honorable mention for Mrs. Winton Zinsser of Live Oak:

Hot Guava Pie

1 double unbaked pie shell
1 quart of guava shells, drained
1 cup brown sugar, packed
¼ cup flour
2 tablespoons butter

Put guavas in large mixing bowl. Mix dry ingredients in small bowl, then pour over guavas. Toss lightly, coating shells well.

Spoon into unbaked pie shell, sprinkle lemon juice over top, add butter in bits. Fit top pastry crust on. Flute top and prick or slash for steam to escape.

Bake at 425 degrees for 35 minutes or until evenly browned. Serve warm with heavy cream or ice cream.

SHORT CUTS

(A $1 prize is paid for every Short Cut published.)

A mantel clock which is beyond repair can be used as a pretty frame for a photograph or painting. Remove the works and insert the picture. *Mrs. B.N., Miami, Fla.*

• • •

Make an inexpensive weedkiller by adding a pound of salt to a gallon of warm water. Pour it on the weeds, being careful not to get it on flowers or grass. *Mrs. R.S., Lithia, Fla.*

• • •

To crumb bread easily for a recipe, remove bread or sandwich buns from freezer and grate them unthawed. *Mrs. W.H.H., Lithia, Fla.*

• • •

To keep pie shells from shrinking as they bake: line unbaked pastry shell with double thickness of waxed paper. Cover bottom with uncooked rice. Place in oven at usual heat for baking pastry. When crust begins to turn light brown, remove paper and rice and finish baking. *D.M.L., Palmetto, Fla.*

• • •

To restore stiffness to a fabric belt, dip it into plastic starch. It will retain texture after many washings. *Mrs. I.O., St. Petersburg, Fla.*

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HOGS REQUIRE a certain minimum amount of good quality protein to grow and make efficient gains.

Failure to recognize this fact—and do something about it—has cost the American swine producer many thousands of dollars, according to Dr. H. D. Wallace, associate animal husbandman with the Florida Agricultural Experiment Stations. He points out:

Protein feeds are the most costly part of the ration. Consequently many farmers are reluctant to purchase protein supplement when it is needed.

Nevertheless, a lack of protein interferes with the utilization of other ingredients in the ration. It also increases the amount of corn or total feed needed to fatten a pig.

"Inadequate feeding," says the expert, "is the cause of much of our pig losses in Florida. And insufficient protein is undoubtedly a major factor in this overall problem."

The amount of protein needed by pigs depends on the size of the pig and whether or not forage is available. The smaller the pig, the more protein he needs.

In rations well fortified with vitamins and antibiotics, 14% of protein is adequate from weaning to 75 pounds. But 16% is better for average conditions.

As the pig becomes heavier, the level of protein should be reduced. From 75 to 125 pounds, 14% is adequate; from 125 to 200 pounds, 12% is enough for efficient conversion of feed to body weight.

When excellent forage is available, the protein percentage may be reduced about 2%.

Pasture is still highly recommended for sows. Cost of growing forage for fattening pigs often exceeds the value of feed replaced.

Dr. Wallace says there are important differences between supplements, and the quality of any one particular supplement is often quite variable. He adds:

"This is particularly true of the animal protein supplements such as tankage and fish meal."

A tankage containing 60% protein is an excellent feed. But one containing 50%, although cheaper per ton, is usually a poor buy.

Purchases, declares the expert, should always be made on the basis of cost per unit of protein; not on the price per ton.

* * *

How smart are you

(Answers to Questions on Page 2)

1. *Lake Superior.*
2. *Yes, it is considered wholesome and palatable.*
3. *The double bass.*
4. *To Israel.*
5. *A draft is a written order to pay; a note is a written promise to pay.*
6. *A sailor.*
7. *Twenty-one guns.*
8. *For kindling, in building a fire.*
9. *To frighten the enemy.*
10. *A bed of sand so water-soaked that it readily engulfs anything that attempts to rest on it.*

* * *

Limestone Helps Keep Soils Fertile

LIME IS PROBABLY the cheapest plant food available. Moreover, it is one of the best insurances for good crop production.

Applying limestone to soil that needs it has been called "the first and most important step in restoring or maintaining soil fertility," reports Dr. W. L. Pritchett, Agricultural Experiment Station soils technologist.

Only a relatively small percentage of farmers use adequate amounts of lime to maintain soil reaction at a level best for plant growth, Dr. Pritchett declares. He adds:

Besides neutralizing soil acidity, limestone plays a number of other roles in the soil. It is the cheapest source of calcium and magnesium, both of which are essential plant nutrients often deficient in Florida soils.

In addition, lime promotes the availability of other plant nutrients and increases the efficiency of fertilizers.

"**Liming may help** to overcome toxic conditions in special cases where chemical residues have accumulated," Dr. Pritchett continues.

"The practice of liming, through its influence on the availability and uptake of plant foods by growing crops, may therefore be considered the cornerstone of efficient crop and livestock production."

Favorable bacterial activity, such as nitrification, is encouraged by lime. Also, lime improves the structure of some soils.

"Not all soils need liming," warns Dr. Pritchett. He cautions against the effect of over-liming.

Get an accurate check on the liming needs of your soils by taking soil samples and having them tested, the technologist recommends.

The best tomato seed comes from California,

says Leigh Abernethy, Manager, Quality Control

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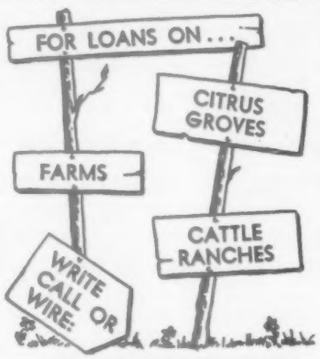

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YOUR ROLL film developed, plus 8 sparkling enlargements (Yes, all enlargements) enclosed in our beautiful leatherette album complete for only 40¢ or if you wish, send postcard for our free film mailer. Superfast service and super-high quality—we've been in business since 1919. Sun Photo Company, Box 2588, Jacksonville, Florida.

JUMBO KODACOLOR SPECIAL! 8 exposure rolls $2.00; 12 exposure rolls $3.00 with ad. Failures refunded. Fast service. Write for mailers. FILMAIL, Box 3208, Dept. F, St. Louis, Missouri.

DOGS – PETS

Pekingese, Chihuahuas, Collies, Shepherds, Fox Terriers, Pet Monkeys. Pete Motley, Wadley, Ala.

HUNTING HOUNDS: Outstanding, Coonhounds, Foxhounds, Rabbithounds, Beagles, Deerhounds, Blueticks, Redbones, Blacktans, Spotted. Sold cheap. Long trial. Catalog free. ECHO VALLEY FARMS, Herrick, Illinois.

BORDER COLLIES—Pups from imported working parents. Satisfaction guaranteed. MARSHALL KENNELS, Deer Creek, Illinois.

ENGLISH SHEPHERDS—BORDER COLLIES America's most useful dogs. Puppies all ages. Both sexes, choice colors. Faithful workers. Satsfaction guaranteed. We breed and sell our own stock. FREE: Rabies vaccination; Training instructions. FAIRMOUNT FARMS, Cedar Falls, Iowa.

CREEKSIDE ENGLISH SHEPHERD Pups, $12.00. Guaranteed heelers, watchdogs, happy guarding the baby. Training instructions. Few older partly trained, $25.00. Creekside Kennels, Beardsley, Minnesota.

STRAIGHT COONERS! World's Oldest Kennel. Combination Hounds, Rabbit, Fox, Beagles, Deerhounds, Bird Dogs. Puppies of all Breeds. Prices Reasonable. Trial. Free Catalogue. RACCOON MOUNTAIN KENNELS, Box 464, Boaz, Alabama.

LIVESTOCK

BUY YOUR VACCINATED dairy cows, heifers direct from the farmers where quality prevails. GEO. E. SWANSON, Rice Lake, Wisconsin, Phone 944-R.

Holstein, Guernsey, Jersey Springers. We breed and deal in the right kind. Call Chattanooga Ex 6-3672. No Saturday sales. JOHN and DON PIERSON, Collegedale, Tennessee.

WISCONSIN'S finest HOLSTEIN and Guernsey dairy heifers shipped to you on approval. Write for free price list. Otto Vanderburg, North Prairie, Wis.

MASTITIS Control means money in farmer's pocket. Don't lose a cow, have your milk condemned or your herd contaminated. Use those fast acting, inexpensive KO-EX 7 Brom Thymol Mastitis Detectors, 50 for $1. Sold all over the world. STERLING RESEARCH CORP., Sidway Bldg., Buffalo 3, New York.

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SERVICE THAT SAVES MONEY: Consultants, Supervisors, Management, and complete services for ranch, grove, farm, timber, and wild life lands; Accounting, income tax, appraisals, loans; Livestock buying, brokers, shippers; Specializing in Florida, The South and Latin America. Se Habla Espanol. FLORIDA AGRICULTURAL SERVICE, P. O. Box 1429, Plant City, Fla. Phone 2-2931.

MACHINERY & EQUIPMENT

4 H.P. GARDEN ROTARY TILLER and Tractor Combined. Both, $119.00 Special this month. Write—UNIVERSAL MFG., 324 West Tenth, Indianapolis 2, Indiana.

PAINT SPRAYER. 7 times faster than brushing. Sensational offer! Free folder. IMSCO, 1829 S. State, Chicago 16, Illinois.

FREE TRACTOR PARTS catalog. 1959 Edition. Tremendous savings. World's largest combination stock of guaranteed new and used parts. CENTRAL TRACTOR PARTS CO., Des Moines, Iowa.

GARDEN SUPPLIES

PROTECT YOUR BERRY CROPS. Cheese cloth, 100 yards by 48", convenient 10-yard lengths, $7.50 prepaid; 50% less mill price. JOSEPH HEIN, Box 356E, Thornwood, N. Y.

RABBITS

RAISE ANGORA, NEW ZEALAND Rabbits, Fishworms on $500 month plan. Free details. WHITE'S RABBITRY, Delaware, Ohio.

TIRES

AEROPLANE AND INDUSTRIAL tires, tubes, Wheels, Chains, most all sizes. Wholesale, Retail. E. H. Green, Box 295, Phone 2-5131, Avon Park, Florida.

SITUATIONS WANTED

FOR HIRE: Mexican vegetable, fruit, farm or ranch workers, with American experience; $100 monthly, board, year round. "Corona," 516-17 Morelos, Guadalajara 9, Mexico.

MERCANT MARINE JOBS! Top wages. Ship's Captain explains how to join. Beginner's Book $2.00. Details free. CAPTAIN, Box 501-CC, Reading, Mass.

FARM SIGNS

FARM SIGNS, all wording, metal, enamel. NO TRESPASSING, etc. Free sample-catalog, write, SIGNS, 54 Hamilton, Auburn, New York, Dept. B.

SONGWRITERS

SONGPOEMS AND LYRICS WANTED! Mail to: Tin Pan Alley, Inc., 1650 Broadway, New York 19, N. Y.

STAMPS

1000 All different postage stamps, $1.35. ARNOLD CROLL, Manitowoc, Wisconsin.

SEEDS – PLANTS

PENSACOLA BAHIA GRASS, EARLY HAIRY INDIGO, and ALYCE CLOVER. All high quality, new crop. Available now. Write for prices. GRAND ISLAND NURSERIES, P. O. Box 906, Eustis, Florida.

Morris Improved Heading Collard plants: 2 ozs.—50¢; 5 ozs.—$1.00; pound, $2.00 Postpaid. E. Morris & Son, Maxton, N. C.

BRUSH & WEED KILLER

KILL BITTERWEEDS, wild onions and dog fennel with R-H Weed Rhap at low cost. Will not injure grasses, grains, cattle or other animals. Call your dealer or write REASOR-HILL CORPORATION, Box 36X, Jacksonville, Arkansas.

KILL submersed water weeds which foul up motor propellers, tangle fishing gear and choke irrigation ditches with R-H Granular Weed Rhap. Inexpensive, easy to use, sure results. For details write Reasor-Hill Corporation, Box 36X, Jacksonville, Arkansas.

KILL BRUSH at low cost with amazing R-H Brush Rhap. Will not injure grasses, grains, cattle or other animals. See your dealer or write Reasor-Hill Corporation, Box 36X, Jacksonville, Arkansas.

FLOWERS

Crinums - Cannas - Daylilies - Stockesia - Coleus - Mums. Quantity, cheap. Other plants wholesale or retail. Write for prices. CLEMENS NURSERY, Melrose, Florida.

Closing Out my daylilies. Bargain prices. SIMS DAYLILIES, Flintville, Tenn.

Legumes Supply Nitrogen as Pasture Fertilizer

NITROGEN, one of the most expensive fertilizer elements, is most cheaply supplied by addition of a legume to grass pastures.

So says J. R. Henderson, agronomist with the Florida Agricultural Extension Service. He reveals:

Grazing trials by the Florida Agricultural Experiment Station have compared fertilized carpetgrass, carpetgrass with lespedeza, and carpetgrass with white clover.

Fertilizer costs per 100 pounds of gain were slightly more than $8 for carpetgrass alone; over $3 for carpetgrass-lespedeza, and slightly more than $2 for the carpetgrass-white clover.

But while nitrogen is most cheaply supplied by inclusion of a legume in grass pastures, Henderson adds, fertilizer nitrogen may result in increased profits *provided* suitable grasses are available.

Good response to heavy fertilization with nitrogen—when used in combination with the proper quantities of phosphorus and potash—has been shown by Pensacola Bahia, Pangola, and Coastal Bermuda.

In one experiment, fertilization costs per ton of forage were no higher than 240 pounds of nitrogen per acre were used than when only 30 pounds were used.

Grasses used in this experiment were Pensacola Bahia and Pangola. According to Henderson, studies indicate that Coastal Bermuda on suitable soils will respond similarly.

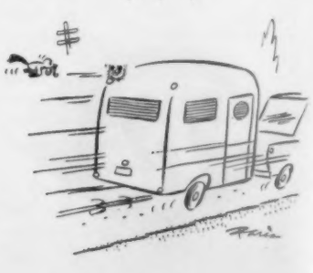
Quality of grass declines within three months after an application of nitrogen fertilizer. For this reason, relatively frequent applications of nitrogen should be made to maintain grass quality and increased yields.

Late summer or early fall applications of nitrogen to grass pastures is desirable for production of surpluses of forage for use during winter.

If soil conditions are such that a good winter legume cannot be grown, Henderson suggests that fertilization with nitrogen at heavier than usual rates may be profitable.

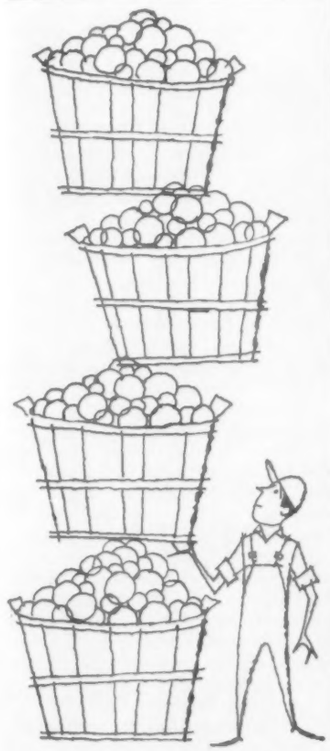
Current recommendations for fertilization of grass pastures call for alternating a complete fertilizer (such as 8-8-8) with a nitrogen material.

Each application of fertilizer—whether it be a complete fertilizer or a nitrogen material—should be made at a rate that will furnish up to 60 pounds of nitrogen per acre.



Dairymen with 'Green Chop' Utilize 80-85% of Crop

As THE COST of land rises and the number of cows needed for profitable operation increases, "green chop" is becoming more significant for small dairymen.



So says J. P. Boggs, staff member of the Florida Agricultural Experiment Station's Dairy Research Unit, Gainesville. He continues:

"Green chop" is the practice of harvesting forage, hauling it, and feeding it in fresh green form. The practice is sometimes called "zero grazing."

Previously, the cost of machinery and equipment discouraged most small dairymen when they thought of using green chop. The minimum cost of a forage harvester was about $3,000.

But now, small flail-type choppers can be purchased for about $1,000. With proper care, these machines are highly efficient and operate for years with almost no maintenance cost.

When using green chop, added labor for a 100-cow herd is only about one and one-half to two hours for daily cutting.

Land requirements for green forage feeding are the smallest of all forage systems. With green chop, a dairyman utilizes 80 to 85% of the crop.

The free-grazed pasture system, Boggs notes, utilizes only about 50 to 60% of the crop.

Using green chop, the dairyman can increase herd size without adding more land. The acreage removed from forage production can be used for a cash crop.

Cows get a higher quality feed when fed green chop, according to the dairy expert. He says this is especially true if a good forage system is followed.

Most crops can be cut at the pre-bloom stage. Multiple cuttings keep the plant in a growing stage.

Once a crop matures, recovery from chopping is slowed. Moreover, the protein content is lowered.

Height of cut is another important point, Boggs stresses. He suggests:

Cut as low as possible without injuring the plant's system. On low-growing crops, three to four inches are recommended; on taller crops, six to eight inches.

"Speaking of modernizing our equipment . . ."

Boost yields with

EMJEO*

(80/82% Magnesium Sulphate)

And you'll boost your profits, too, because magnesium (along with nitrogen, phosphorous, and potash) is considered a primary plant food in Florida. Lack of it can be most costly—both in the quality and quantity of your harvest.

ACT NOW!

In case of magnesium deficiencies, EMJEO is used for direct application. You need only apply the amount that is required. Insist on EMJEO as the source of soluble magnesium in your fertilizers.

**Trademark Reg. U.S. Pat. Off.*

BERKSHIRE CHEMICALS Inc.

630 Third Ave., New York 17, N.Y.

this John BEAN SPRAYER . . .

is BUILT IN FLORIDA with *all the features* FLORIDA GROWERS WANT

RUGGED HIGH PRESSURE PUMP—Fully enclosed and oil-bath lubricated, John Bean's Royal Triplex pump has Sapphite ceramic cylinders that last a life time, even with concentrates. Cylinders are diamond-honed for minimum wear on plunger cups. 20 to 60 GPM models — 600 to 800 lbs. pressure. Thorough spray coverage; fast, 90 GPM or better tank refills.

DEPENDABLE V-BELT DRIVE—No expensive chains or sprockets to wear out.

CORROSION-RESISTANT CYPRESS TANK—Chemical proof, leak free: 200-300-400-500 gallon sizes. *Metallized* steel tanks optional—the most corrosion resistant ever developed.

HEAVY-DUTY BOOM—Heavy steel, dry boom has double-action breakaway. Nozzles and downpipes furnished by your John Bean dealer to fit your needs exactly.

HI-CLEARANCE AXLE—Has 36" to 48" height adjustment, 64" to 84" tread.

John Bean's Florida Row-Crop Sprayer has an unmatched record for efficiency and low-cost maintenance throughout the state. Write to Orlando Factory for full details. Demonstrations given without obligation.

Send for new Handy Calculator for figuring concentrate or dilute spray solutions. It's free.

Thinking of Irrigation?

YOU'LL GET MORE RETURN ON YOUR INVESTMENT FROM A SYSTEM THAT IS ENGINEERED and REGISTERED

REGISTERED SPRINKLER IRRIGATION SHUR-RANE

Designed and installed by hydraulics experts to fit your land, your crops and your water supply exactly, your SHUR-RANE system is engineered for more profitable yields. It's registered, too . . . to make additions easy and to keep you informed of new irrigation developments.

For complete details, write or call the SPEED SPRAYER PLANT, ORLANDO, FLORIDA OR SEE YOUR NEAREST DEALER

fmc FOOD MACHINERY AND CHEMICAL CORPORATION

John BEAN LANSING 4, MICHIGAN ORLANDO, FLORIDA

Division of Food Machinery and Chemical Corporation

Editorial Comment

An Open Letter to *Life, Time* and Publisher *Luce*

IN THE HISTORY of American journalism, few publications have done more injustice to the people of a particular region than *Life* and *Time* magazines. Probably more than any other single factor, these magazines have—through prejudiced and editorialized news reporting—caused the people of the rest of the nation to misunderstand, underevaluate, or rebel against the distorted Southern viewpoint presented.

These magazines, published by Henry Luce, have perpetuated a travesty of the impartial press as we know it in America by painting the racial struggle in their personal, one-sided colors of a battle between Negro and cruel, sordid, inferior whites. They have left no stone unturned to graphically capture the small minority of people in the South who wrongly and violently strike against the Negro—representing these people, unfairly and irrepairably, as typical of Southern thought and behavior.

Then, as if to bury the hatchet deeper, these magazines plunder the cardinal rules of an honest, balanced press in deceitfully portraying the Negro as enjoying happy social and economic equality with whites in other parts of the nation. Neither white man nor Negro will buy that, Mr. Luce!

It is time for *Life* and *Time* to revisit the South and discover the realities, Mr. Luce. Thoughtful Southern white people and Negroes are vastly more concerned about our problems than your editors who splice party line implications into news writing.

Interview the white and colored people in the South. You will be amazed at the inherent sympathetic and hopeful attitude the Southern white has for his fellow man, the Negro. You will, no doubt, be surprised that he feels a keen responsibility for the problem.

But you may be chagrined to learn some of the realities. The realities are the facts, Mr. Luce. And they run quite contrary to your belief that all we have to do is mix white with black and stir gently.

The fact is, Mr. Luce, that the white man and the colored man have been socially separated down here for about 300 years. Supreme Court mandates and your tragic comedy of colors and words in your magazines have not helped us shrink this period much.

The fact is, Mr. Luce, that while it may be contrary to the new law and the way you picture it in your magazine, white people and colored people just are not happy in mixed social company down here. If you don't believe it, ask both of us.

The fact is, Mr. Luce, we have been concerned about our problem down here for many years. And while we have not pleased you, no doubt, in the way we have dealt with it, nonetheless we have been faced—yes, even saddled—with the mountainous realities of economics and social customs with which we have lived for three centuries. These things cannot be changed by twisting them and printing a different version in a magazine.

We recognize the Negro as a man created in the same image as the white and equal in the sight of God. We believe he feels pretty much the same about the white man.

We know he has been economically retarded. He knows it too.

The Negro knows a better life and *unlegislated* respect is what he really wants and deserves. He does not want himself or his family to be flung amidst white people when neither he nor they are conditioned to accept each other. And that's a *fact,* Mr. Luce!

But you want to fling him there, even if you have to do it artificially. And you continually degrade the South by posting our attitude as that of a tobacco-chewing, cross-burning renegade. These are *not* the facts, Mr. Luce.

Nearly every Southerner, Negro and white, has lain awake nights grappling with this huge, impending problem of how two surging races can live together peacefully and fruitfully. But none of us, Mr. Luce, is so bold or so stupid as to forget the realities.

Letters to the editor

'Brand' Advertising

Dear Sir:

Your editorial comment of May 1959 decried the lack of good "brand" advertising in connection with Florida citrus products. I have an idea that might work. . . .

Since no single grower is big enough to corral all the trade, I suggest that a combination of growers (always leaving the door open for additional Florida growers) adopt a symbol to be printed or stamped on their fruit in a manner similar to that employed by the California Sunkist people. . . .

The imprint should incorporate several ideas – the sweetness of the fruit, the fact that it is a Florida product, etc – in the shape of an imprint like so:

(Here the author illustrates his idea using the words "Florida," "sweet" and "citrus" to form a triangle. He continues:)

This stamp is to be used by every member. It is not intended to supplant his individual brand name.

While this may sound like an additional expense for the present, it must be acknowledged that the Sunkist people have capitalized on this idea. And in every store in America where citrus fruits are sold, people look for this mark as a guarantee of quality.

Quite possibly, it may take some time for the idea to catch on. But eventually it will be as eagerly sought after as the one that is at present the envy of the FLORIDA GROWER. And . . . supplemental advertising . . . about the symbol . . . will materially lessen the time it will take to catch on

I do believe that there is much merit in selling the "sweetness" of the Florida oranges. But if Florida citrus growers don't do something about getting together . . . the pressures will continue until a near disaster occurs to awaken us to the fact that we have been amiss in trying to reach the reasonable potential of Florida citrus.

We . . . raise no citrus fruit here. Where we have a choice, we always choose Florida fruit. But we get the Florida fruit in small quant'ties and at irregular intervals.

Transportation charges are high here, and the Florida product has a longer way to travel than the California product. Then, too, the Sunkist distributors are right "on the ball" where competition is concerned.

It may be that the Florida growers feel that the territory is big enough for all. If that is true, I might be intruding by mentioning this idea at all – for "a person convinced against his will is of the same opinion still."

C. H. Harris
Albuquerque, New Mexico

(Editor's Note: Above is the gist of letter written May 22. However, in accordance with Mr. Harris' request, we delayed its publication in order to first submit it to leaders of the Florida citrus industry.)

* * *

Florida, with a total of 865,000 head, ranks 10th among the 38 states having 100,000 or more beef cattle. Florida's beef cattle production has increased 75% in the past 10 years.

* * *

The greatest ability is dependability.

THUMMER GREEN – – *- - - SHARMAN*

Peanut Growers Advised:

Don't Use Shells for Mulches

RECENT STUDIES show that the meadow nematode is a dangerous foe of peanut growers.

USDA studies in the Georgia Experiment Stations have shown that this pest feeds on the fruiting pegs and shells of peanuts, rather than on the roots. This causes many nuts to be left in the ground at harvest.

To minimize these chances of infection, the USDA recommends against the use of peanut shells for mulches.

Row fumigation of field plots has reduced nematode counts by 93 to 98%. It has also improved yields.

However, more field trials are being planned to learn whether it is best to fumigate rows before planting or to side-dress with nematocides as blooming starts.

* * *

Record Price

(Continued from Page 23)

last year and a 10-year average of 63.

Seedless grapefruit are rated at 57 points. This number is three less than last year and 10 less than the 10-year average.

"Condition" figures indicate only the trend, however. They cannot be used, even with the sharpest of pencils, to work out an actual crop estimate.

There are still too many weeks ahead with uncertain weather for anyone, even a statistical wizard, to forecast the new crop with any assurance of accuracy.

But regardless of the size of the crops, it will be another interesting year for Florida citrus growers. And barring a national depression, they will make a good—if not fantastic — profit on all their varieties.

* * *

A good way to save face is to keep the lower half closed.

Disease-resistant "cukes" mean extra dollars!

"You can afford to gamble on a high-priced harvest of early spring or late fall cucumbers . . . when you plant a highly mosaic and downy mildew resistant seed, like Robinson's Challenger F-1 Hybrid Cucumber," says Ward Robinson. "Our breeding staff recognized this vital need for disease resistance, many years ago, and today we offer almost twenty open pollinated and hybrid cucumbers bred to produce maximum yield under diverse growing conditions. Ask your supplier for disease-resistant Robinson cucumber seeds with the bright blue SRS label. And be sure to write to me if you'd like information about our special strains."

LAWRENCE ROBINSON & SONS
SRS Member-Breeder of vineseeds

SEED RESEARCH SPECIALISTS, INC.

SALES OFFICES: SRS, Modesto, Calif., U.S.A.

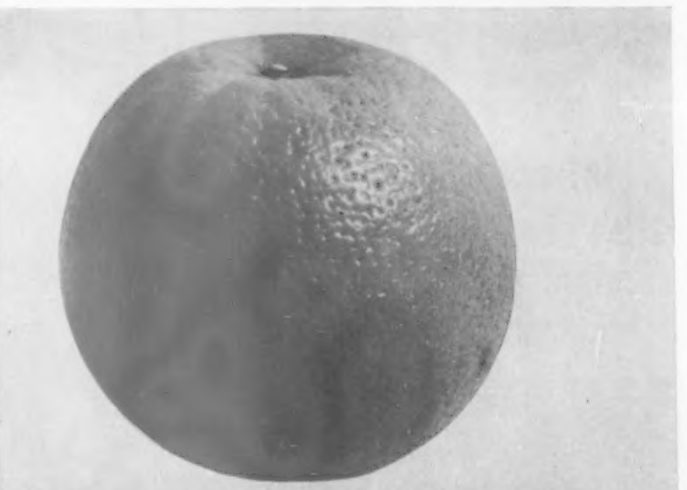
WRITE FOR NAME OF NEAREST SUPPLIER

SRS

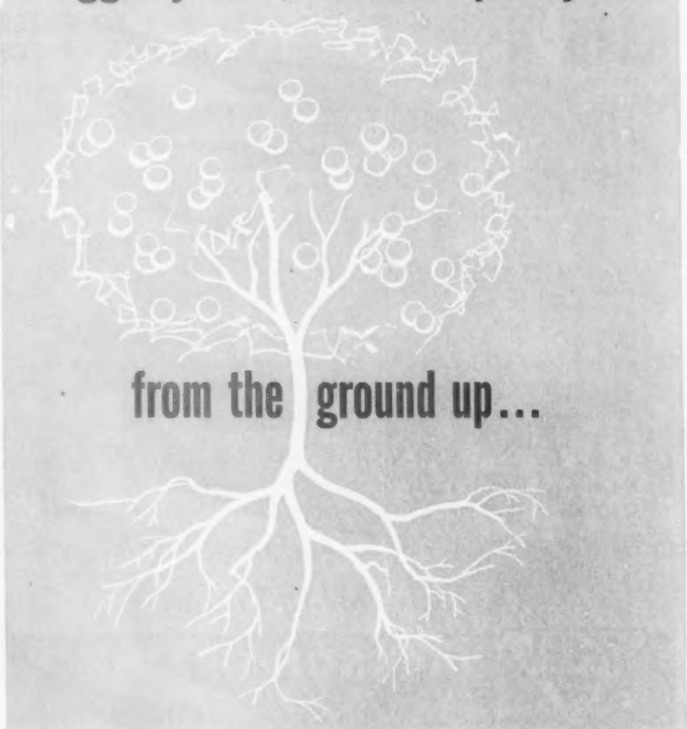
Systox®
SPRAY CONCENTRATE

Gives you complete clean-up of aphids and mites on citrus!

A PRODUCT OF CHEMAGRO



Bigger yields of better quality...



from the ground up...

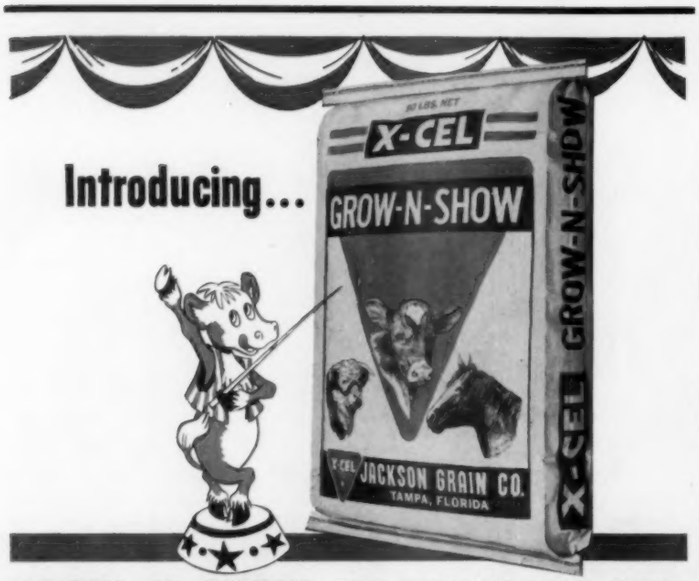
with tecmangam

The presence of manganese in your fertilizer is essential for maximum yields of top quality citrus fruits.

Best source of manganese is Tecmangam, Eastman manganese sulfate (75-78%). Free-flowing and non-dusting, Tecmangam is easy to handle. Completely soluble, it can also be applied in a nutritional spray.

Order TECMANGAM in bags from your local fertilizer distributor. Carload quantities are shipped directly from

Eastman CHEMICAL PRODUCTS, INC.
KINGSPORT, TENNESSEE, subsidiary of EASTMAN KODAK COMPANY



GROW-N-SHOW THE NEW WAY TO RAISE MORE PROFITABLE CALVES

We proudly present . . . X-CEL GROW-N-SHOW, developed by Jackson Grain and Carnation-Albers Research Farms to make Florida farming more profitable.

Combining high quality grains and minerals with 25 per cent world-famous Calf Manna, X-CEL GROW-N-SHOW eliminates the need for feeding a calf-developing ration **plus** Calf Manna after weaning.

This superior two-feeds-in-one ration contains all the essential nutrients needed by Florida calves for thrifty, sturdy growth. It is also an excellent ration for horses and an outstanding supplement for conditioning and finishing show animals.

Ask for the GROW-N-SHOW story today! Your friendly X-Cel feed man is ready to show you how X-CEL GROW-N-SHOW can save you time and labor, and help you raise more profitable animals.

— Our 50th Year Of Progress —

X-CEL SINCE 1909 **JACKSON GRAIN CO.**
• FEEDS • SEEDS • FERTILIZERS • INSECTICIDES
TAMPA, FLORIDA

TENNESSEE BASIC SLAG • VIKING SHIP BRAND CALCIUM NITRATE

60 Gallons a Minute

VAC-ALL THE MIRACLE PUMPING UNIT

Fits ordinary drums or tanks of any size—simply attach to intake manifold of any gasoline engine.

Why spend money for expensive pumping equipment when this COMPLETE UNIT sells for only **$46**

Write . . . Wire . . . Phone

WINCHELL OIL EQUIPMENT CO.

1420 Atlanta Ave. — P. O. Box 8471
Phone GArden 4-2468 ORLANDO

Poultry Institute Program Given

GOOD MANAGEMENT HELPS MEET COMPETITION" is the theme of the 18th annual Poultry Institute scheduled for August 17-22 at Camp McQuarrie, according to J. S. Moore, Extension poultryman. Camp McQuarrie is about 35 miles east of Ocala in the National Forest, on the Ocala-DeLand highway.

This year's six-day program will cover a wide range of topics, including poultry nutrition, diseases, managing and marketing, and will stress the economics of the Florida poultry industry and future growth.

Registration begins at 2:30 P.M. Monday, August 17, and will be followed by a general assembly Monday evening. The actual program gets underway at 9:00 A.M. Tuesday. In addition to planned daily programs, the week will feature various recreational events, including a fishing contest.

Program discussion topics and speakers during the following days will include:

Tuesday Morning

"Florida's Poultry Industry Five Years From Now"—Dr. Ralph Eastwood.

"Are Your Poultry Records Adequate For Tomorrow's Poultry Business?"—Dr. C. C. Moxley.

Film: "Automation On The Poultry Farm"—Roger Williams.

"Handling Egg From The Nest To The Housewife"—C. F. Parrish.

"Egg Quality Research"—Fred R. Tarver, Jr.

Tuesday Afternoon

"General Considerations In Contracting Versus Independent Production"—Edward Karpoff.

"Florida Contract Egg Farming"—a panel discussion, Frank Cune, moderator—panel members, Phil Freeman, John Sceussel, Brooks Herman.

"An Experimental Poultry House"—Joe Richardson.

Wednesday Morning

"Laying Hen Nutrition Research"—Dr. Robert H. Harms.

"Do Different Strains of Laying Birds Require Different Feeds?"—Dr. W. W. Cravens.

"Utilizing Your Poultry Fertilizer"—Dr. James NeSmith.

Film—"Restricted Feeding Of Replacement Pullets"—Dr. E. I. Robertson.

"Coccidiosis In The Production Pullet"—Dr. Ted Millen.

"How We Determine Infectious Bronchitis New-Castle Disease and Laryngotracheitis In The Laboratory"—Dr. Jack Tumlin.

Wednesday Afternoon

"Management Of The Laying Flock—Some Cost Figures"—C. F. Parrish.

"Poultry Disease Research"—Dr. William R. Pritchard.

"Observation Of The Poultry Serviceman"—A panel discussion—Dr. Wayne Neal, moderator. Panel members—Jim Littman, Silas Little, Bill Smith.

"Our National Egg Organizations—P.E.N.B. and The National Egg Council"—Curtis Collier.

Thursday Morning

"The Poultry Diagnostic Laboratories Are Finding These Diseases and Parasites In Florida"—Dr. Birch L. McMurray.

"The Energy Requirements Of The Laying Hen"—Dr. W. W. Cravens.

"C.R.D. (Chronic Respiratory Disease)"—Dr. W. H. Rhodes.

"What Can We Expect From The Breeder In The Future, Where Are We Going With Our Poultry Breeding?"—Cletis Williams.

"Coccidiostats"—Dr. E. I. Robertson.

(Continued on Next Page)

RUGGED MONEY MAKER!

Bush-Hog
heavy duty — all purpose
ROTARY CUTTER

... a workhorse that pays for itself

.. powers through toughest cutting in a breeze

Rugged, dependable BUSH-HOG chews up toughest undergrowth in one powerful pass. Makes match sticks of 3" saplings or anything tractor can push over. Cuts, shreds, spreads stalks and pasture growth in one fast sweep.

NOW!...MOW HAY WITH BUSH HOG

BUSH HOG's new hay cutter adaptation eliminates 2 machines and 1 operation. It cuts toughest hay on roughest ground, crushes stems for quick drying, all in one operation. No need for sickle bar mower, hay conditioner for most hays.

EXCLUSIVE FEATURES MAKE BUSH HOG YOUR BEST BUY!

1. Heavy Gauge (¼") frame.
2. Patented "Flying Saucer" blade holder.
3. 360 degree swinging blades.
4. Enclosed rear.
5. Direct Drive, heavy-duty gears.

5, 6, 7 ft. swaths, lift and pull types—all hitches

NEW THIS YEAR—5 FT. ECONOMY MODEL

OTHER BUSH HOG IMPLEMENTS
• 8 FT. MOWER • PASTURE SEEDER
• 42" BELLY MOUNT MOWER

GET THE PIONEER ROTARY CUTTER
BUSH HOG . . . DON'T ACCEPT A SUBSTITUTE!
SEE YOUR DEALER!
FREE! . . . color folder . . . Write

BUSH HOG MANUFACTURING CO.
Selma, Alabama

"GRADE 'A' MEANS FRESH," Florida Egg Commission representative (left) informed Mrs. T. E. Shields, Tampa housewife, during one of some *130* point-of-sale egg promotions staged recently in major cities throughout the state. The Florida Egg Commission staged the six-week educational campaign to promote the consumption of locally-produced eggs.

Values and meaning of the various egg grades were explained by the Commission representatives. They stressed the food value of eggs by pointing out they are in the same nutritional category as fish and meat.

"Size equals weight" was one of the campaign slogans. This example was cited: If a dozen of large eggs—which must weigh a minimum of *24* ounces— costs *45* cents per dozen, the per-pound cost of this nutritious food would be *30* cents.

Always select eggs which have the orange label or map of Florida on the carton. This is your assurance of top quality Florida eggs, the Commission representatives told housewives.

The Kimber Research Center looks at eggs **from every angle**

K-137 *KimberCHIKS*® are tops **for egg quality**

K-137 Kimberchiks ranked *first for firm albumen* among all nationally sold chicks entered in three or more of the same 1957-58 Random Sample Tests. This is one result of a research program started years ago which today calls for breaking out over 100,000 eggs from pedigreed stock each year. High *production*, good *livability*, and the highest percentage of *large early eggs* have also been bred into the K-137 Kimberchiks you'll be proud to raise today.

WE ALSO HAVE STARTED PULLETS.

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Rt. 2, Box 374 Valrico, Fla.
Tel. Tampa 49-3054 - 49-1033

Poultry Program

(Continued from Page 34)

"The Effects Of Antibiotics In Poultry Feeding"—Dr. J. H. Hare.

"Poultry Health and Nutrition"—a panel discussion—Dr. Robert Harms, moderator. Members — McMurray, Rhodes, Robertson, Hare, Williams, Craven.

Thursday Afternoon

Awarding prizes to 4-H Club members in the Poultry Electric Contest—Ray Pettis.

"The Economic Outlook Program of the AMS and Supporting Poultry Statistics"—Edward Karpoff.

"Pooling Eggs To Capture Florida Markets"—Ray Starnes.

"Egg Marketing Now and How It Will Be Carried On Five Years From Now"—John Weeks.

"Your Florida Egg Commission In Action"—Carl Binger.

Friday Morning

"The Florida Random Test"—A. W. Osteen.

"Factors To Consider In Buying Started Pullets"—A. Howard Fingar.

"Planning A Vaccination Program For Infectious Bronchitis, New-Castle and Laryngotracheitis"—Dr. Jack Tumlin.

"Blood Typing In Crosses of Inbred Hybred Chicken"—Dr. Ted Millen.

"How To Evaluate A Strain Of Birds For Egg Production"—Dr. Cletis Williams.

"What's New In Insecticides"—James E. Brogdon.

Friday Afternoon

"Interpreting Random Sample Test"—Dr. R. E. Cook.

Annual Meeting Florida Hatchery and Breeding Association.

DEKALB SCIENCE

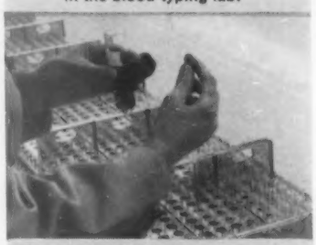
can turn Blood Cells into EXTRA Dollars for you!

DeKalb's Blood-typing pinpoints desirable traits in Parent lines

An exacting new science has been put into high gear in DeKalb's poultry laboratories. This new, modern approach to creation of even better DeKalb Chix is BLOOD-TYPING . . . the ingenious project of Dr. W. E. Briles who joined the DeKalb staff in 1957 after pursuing the same line of research at Texas A. & M. College. Blood-typing is another long stride forward by DeKalb in a never-ending search for better and better layers for poultrymen. Even though DeKalb Chix are right up among the top at this time, so far as egg production, uniformity, feed conversion and livability are concerned, DeKalb blood-typing promises even greater performance from the DeKalb Chix of the future. The practical and proven theory of "like tends to beget like" still applies . . . the only difference being that, through DeKalb blood-typing, even greater selectivity of breeding stock is possible . . . thus purifying DeKalb Chix even further for the genetic factors that spell GREATER PROFITS for you.

Dr. Briles holds an inbred male that has been blood-typed.

These technicians are kept busy in the blood-typing lab.



The reaction of blood with reagents segregates the types.

What DeKalb Blood-Typing Promises

1. **Increased Egg Production.**
2. **Better Livability in both Chix and Adults.**
3. **Faster Growth.**

SEE YOUR DEKALB DEALER FOR DEKALB CHIX

Or One of These DeKalb Associate Hatcheries:

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Tri-States Hatcheries, Inc., Graceville

Brandenburg Hatchery, Dunedin

Rodriguez-Brandenburg Hatchery, Havana, Cuba

Check-R-Board, Palatka

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Commercial Producers and Distributors of DeKalb Seed Corn, DeKalb Chix and DeKalb Hybrid Sorghum

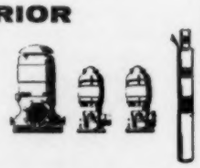
Planning to Irrigate?

LOOK TO THE LEADER—
LOOK TO **PEERLESS PUMPS**

A good solid pump is the backbone of any irrigation system. So plan now to start with the best—A Peerless Deep Well Pump. There's good reason for you to settle on a Peerless: You'll find Peerless Pumps are engineered to your own crop, soil and water requirements. What's more you'll find Peerless Pumps give you more dollar for dollar value in quality of design, in quality of day-in-day-out performance. And when it comes to service, Peerless has them all beat by a country mile. So if you're planning to irrigate, be doubly sure you get the best. Call your Peerless dealer now.

PEERLESS - SERVICE IS SUPERIOR
THE PRICE IS COMPETITIVE

Only Peerless offers these four—1. Oil or water lubricated deep well turbine pumps; 2. The Champion turbine for small drilled deep wells; 3. The amazing Hi-Lift, a positive displacement pump for deep wells; and 4. A submerged motor-driven deep well turbine.



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Citrus Growers' Institute Program Speakers Revealed

The result of applications of sprays and dust materials by aircraft . . . the production of quality fruit . . . the long-range outlook for citrus . . .

Cited above are just three of the many topics which will highlight the 26th annual Citrus Growers' Institute. Directed by the Florida Agricultural Extension Service, the Institute will be held August 10-14 at Camp McQuarrie.

Scheduled speakers will include technical workers, Extension Service personnel, industry leaders, growers, and production men.

Reservations should be addressed to: Institute Manager, R. E. Norris, Lake County Agricultural Agent, Tavares.

Technically, the Institute's program will not begin until Tuesday morning. The afternoon of Monday, August 10, will be devoted to registration.

Discussion topics and speakers during the following days will include:

Tuesday Morning

"Managing and Care of Young Citrus Trees": Fred P. Lawrence, Extension citriculturist.

"Using the Murcott to Its Best Advantage": Dr. William G. Long, horticulturist, USDA, Orlando.

"Disease Problems with the Murcott": Dr. L. C. Knorr, associate plant pathologist, Citrus Experiment Station.

Tuesday Afternoon

"A Progress Report on Frost Prevention Studies at the University of Florida": Joe N. Busby, assistant director, Agricultural Extension Service.

"Citrus Spray Oils": Dr. A. A. Whipp, California Spray Chemical Co., Orlando.

"Where to Get Registered Citrus Trees"; R. G. Pitman Jr., president, Florida Nurserymen's Association.

"State Plant Board Regulations and the Citrus Grower": panel discussion moderated by Dr. W. G. Cowperthwaite, commissioner.

Wednesday Morning

"Rejuvenating and Thinning Some Old Citrus Trees": J. B. Norris, Lake County grove owner.

"Close Spacing of Citrus to Reduce Production Costs": Zach Savage, agricultural economist, Agricultural Experiment Stations.

"Hedging and Topping Citrus Trees in California": Paul W. Moore, specialist, horticulture department, Riverside (California) Experiment Station.

"Cold Hardiness Studies on Citrus in Florida, Texas and California": Dr. William C. Cooper, head, Citrus and Subtropical Fruit Section, USDA, Orlando.

Wednesday Afternoon

"Remarks on Present Citrus Production": J. C. Townsend Jr., agricultural statistician, U. S. Crop Reporting Service, Orlando.

"Advertising Plans of the Florida Citrus Commission for 1959-60": Homer Hooks, Commission manager.

"Our Observations of the Aerial Application of Sprays and Dusts for Citrus": panel discussion moderated by James E. Brogdon, Extension entomologist. Panel members will include:

Harvey J. Sutton, assistant production manager, Waverly Growers Cooperative; George McClure, Libby, McNeill & Libby; W. H. Gibbs Jr., a grower; Dr. W. Husmann, Apshawa Groves; R. C. Potter, Airplane Dusting Service, Zellwood; W. K. Price III, a grower; Fred P. Lawrence, citriculturist, and James H. Annear, Trans-American Helicopters, Inc., Orlando.

Thursday Morning

"The Long-Time Citrus Outlook": Dr. H. G. Hamilton, head, department of agricultural economics, University of Florida.

"Past, Present and Future of the Express Fruit Shipping Business": William A. Stubbs, secretary-manager, Florida Express Fruit Shippers Association.

Sweet Corn researchers are growers, too . . .

"You can learn and do a lot in the lab when it comes to plant breeding, but there's no substitute for working with corn as it actually grows in the field," says Dr. Stuart Smith, our Research Director and the nation's foremost hybrid sweet corn authority. "My research and breeding people have been growers—and they still are . . . *specialist* growers, each one a corn expert. When you buy Sweet Corn Research seed, with the bright blue SRS label, you are buying seed developed by specialists for your particular growing needs!"

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"Values of Various Sources of Nitrogen": Dr. Ivan Stewart, associate biochemist, Citrus Experiment Station.

"Progress Report on Herbicides to Control Weeds in Citrus Groves": D. W. Kretchman, assistant horticulturist, Citrus Experiment Station.

Thursday Afternoon

"Florida Citrus Mutual Plans for 1959-60": Vernon Conner, president.

"What the Fresh Fruit Industry Wants": John T. Lesley, president, Florida Citrus Exchange.

"What the Concentrate Industry Wants": Dr. W. R. Roy, vice president in charge of technical services, Minute Maid Corp.

"How to Raise Quality Fruit": a panel discussion moderated by Extension citriculturist Fred P. Lawrence. Individual topics of the panel members are as follows:

"By Fertilization": Dr. Paul F. Smith, plant physiologist, USDA, Orlando.

"By Spraying": Dr. R. B. Johnson, associate entomologist, Citrus Experiment Station.

"By Using Maturity Sprays": Dr. E. J. Deszyck, associate horticulturist, Citrus Experiment Station.

"Rootstocks and Scions": Dr. F. E. Gardner, principal horticulturist, USDA, Orlando.

"Irrigation": Dr. L. W. Zieglor, professor of citriculture, University of Florida.

Citrus Close-Ups

(Continued from Page 6)

should receive from 1 to 1¼ pounds for each year instead of the three-fourths pound for younger trees. If trees are growing in a lawn, *don't* let lawn or other grasses grow around the trunk of the tree. It is best to keep the ground bare from the trunk of the tree out to the drip. This is not only better for the tree, it also looks better and facilitates the care of the tree. If you mulch your trees, *don't* let the mulch rest against the tree—keep an area at least six inches from the tree bare—this helps prevent fungi and certain insects attacking the trunk of the tree.

Last but not least, *don't* overwater the tree. This is especially important to young trees. On the other hand, it is equally as important to see that young trees receive ample water. It is a good practice to water young trees thoroughly every other day or every third day during dry weather during the first year after they have been planted. After the tree becomes established it will get along quite well in ordinary times, and will require water only during dry weather. There again it is better to water thoroughly and skip several days before rewatering. This is not always possible where trees are growing in a lawn. In these cases we encourage you to do a better job of watering your lawn and skip a day or so between applications rather than watering a little each day.

If you are interested in doing a better job of caring for your dooryard citrus trees we suggest you write us for a copy of Bulletin 166.

Systox®
SPRAY CONCENTRATE
Still your most effective control for aphids and mites on citrus!
A PRODUCT OF
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INCREASE CROP YIELD!
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AS LOW AS 1¢ SQ. FT.
A Seamless Polyethylene Sheeting Made in Clear or Sun-Resistant Black
COVERALL is water-proof, rot-proof, acid-proof. Meets FHA specifications. Durable, inexpensive. The Best Polyethylene Sheeting Money Can Buy. Made by Warp Bros., Chicago 51, Ill.—Estab. 1924. Originators and Largest Producers of Plastic Sheeting for Farm Use.

Price Per Square Foot	Widths Available—100 Lin. Ft. Rolls
2 Gauge (.002).....1¢ Sq. Ft.	3', 4', 9' & 16 ft. widths
4 Gauge (.004).....2¢ Sq. Ft.	3', 6', 10', 12', 14', 16',
6 Gauge (.006).....3¢ Sq. Ft.	20', 24', & 32 ft. widths
8 Gauge (.008).....4¢ Sq. Ft.	12', 16', 20' & 24 ft. widths

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can be rebound in handsome leather or fabrikoid. We have complete facilities and specialize in repairing and rebinding Bibles. Write for illustrated brochure with price list.
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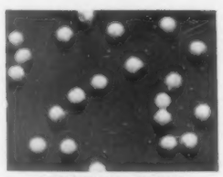
Planned Fertilization Gives Top Citrus Yields

Florida growers and grove managers are discovering that planning a fertilizer program with their local fertilizer manufacturer brings them continued high yields of top grade fruit. Your fertilizer manufacturer has a wealth of profitable experience and service that he can pass along to you. He will help you with soil testing and evaluation. Then, he can supply the fertilizer with just the right combination of plant foods to give you a heavier set of high quality citrus. Visit your fertilizer manufacturer for a talk about your program. It will profit you to do so.

The Right Nitrogen Material

What makes Phillips 66 Ammonium Nitrate the preferred nitrogen material with Florida growers and fertilizer manufacturers? The unretouched photos at the right tell the story. Phillips 66 Nitrate prills are all uniformly round and hard. For manufacturers this means higher quality fertilizers since Phillips 66 Nitrate prills stay uniformly mixed with other materials. For growers, Phillips 66 Ammonium Nitrate—either in mixed fertilizers or as a straight material—means easier, free flowing application . . . more uniform crop response.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Agri-mycin 500 can help you control the devastating losses from bacterial spot as shown above. Used in seedbeds, or newly planted fields, Agri-mycin will help you get a higher percentage of disease-free plants which produce quality fruit.

TOMATO and PEPPER PRODUCERS:

Control Bacterial Spot Better Than Ever Before with

Agri-mycin® 500*

*Agri-mycin brand of oxytetracycline-streptomycin formulation
*U. S. Patent 2,777,791

THE ONLY PATENTED COPPER-ANTIBIOTIC COMBINATION

Latest Florida Experiment Station reports show that *basic copper plus streptomycin formulation gives far more effective control of bacterial spot than copper compounds or antibiotics used separately.*

Now you can get this same effective and economical control with Agri-mycin 500, the combination of antibiotics—streptomycin and Terramycin*—plus copper.

The copper and antibiotics work together to prevent and eradicate bacterial spot. The antibiotics are absorbed into the plant tissues to work from within as well as on the surface . . . explaining why Agri-mycin is effective even if disease has already attacked your tomato or pepper plants.

Agri-mycin 500 is also effective against these other costly fungal diseases: Early Blight, Late Blight, Septoria Leaf Spot, Anthracnose, Leaf Mold and Cercospora.

Get Agri-mycin 500 now for more effective disease control in your tomato and pepper crops than you've ever had before.

*Terramycin brand of oxytetracycline

Florida Experiment Station Seedbed Tests (1)

	Amounts Used/100 gal.	% Healthy Pepper Plants	% Healthy Tomato Plants	Aver. Total Control Effectiveness
No treatment (Control)	—	0	0	0
Basic Copper Sulfate	4 lbs.	20	0	10%
Calcium Copper Chloride	4 lbs.	3	3	3%
Streptomycin	200 ppm.	87	7	47%
Basic Copper *and* Streptomycin (as in Agri-mycin 500 Formulation)	4 lbs. 100 ppm.	87	80	83%

Tomato varieties: Jefferson, Manalucie; Pepper variety: California Wonder. Seven sprays at 3-6 day intervals under natural Florida weather conditions.

(1) Plant Disease Reporter, Vol. 43, No. 2, February 15, 1959

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Science for the world's well-being

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Agri-mycin 500 and Agri-mycin* 100 are now available from these Florida Distributor locations:

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*Agri-mycin brand of oxytetracycline-streptomycin formulation
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5-lb. bag of Agri-mycin 500 makes 100 gallons of spray . . . enough to treat over 2 acres of field-planted seedlings depending on plant size. Save 10% on the 25-lb. bag which makes 500 gallons of spray.